Fig. 1_{\cdot}

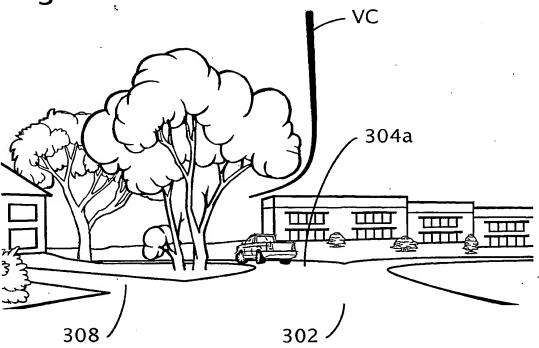


Fig. 2

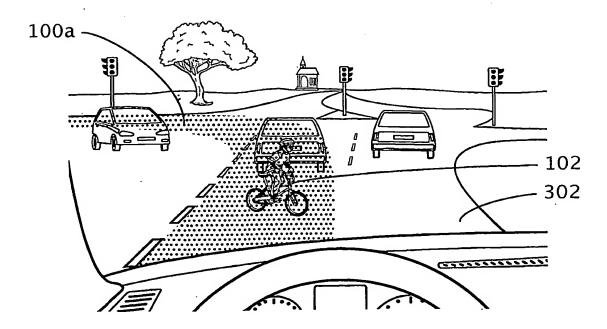


Fig. 3A

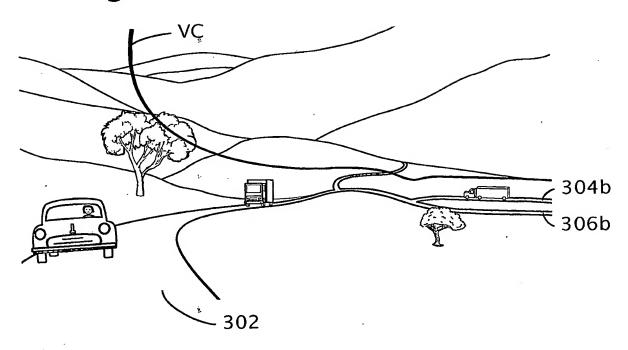
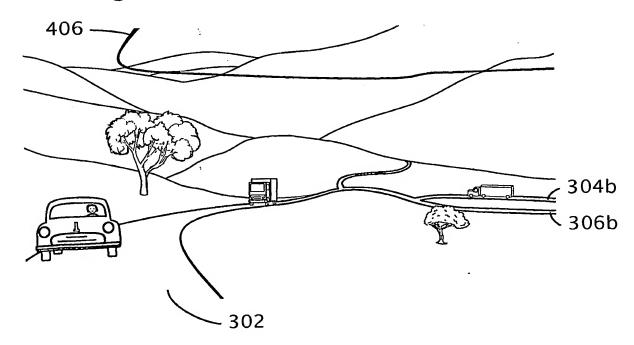


Fig. 3B



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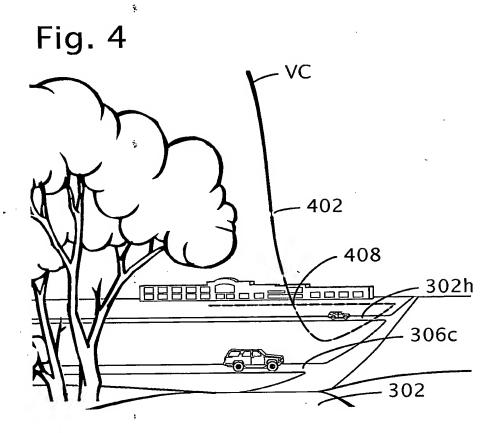
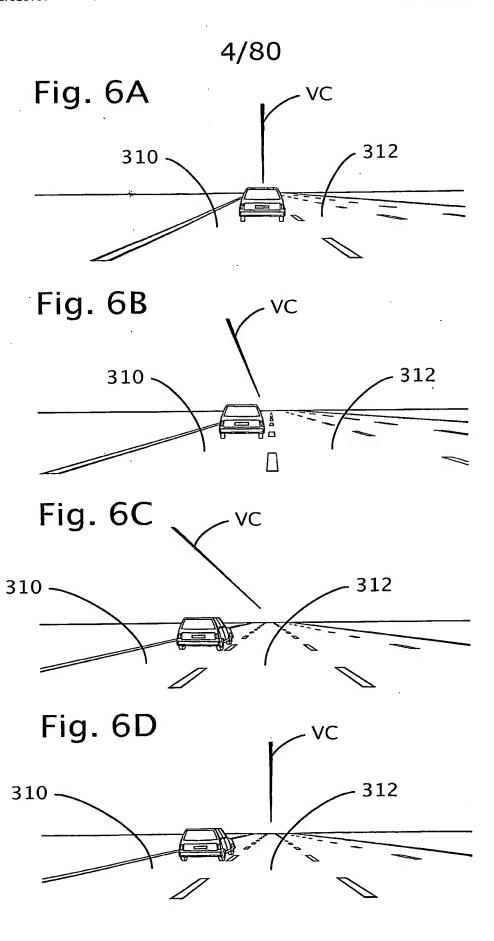


Fig. 5A Fig. 5B

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Fig. 7

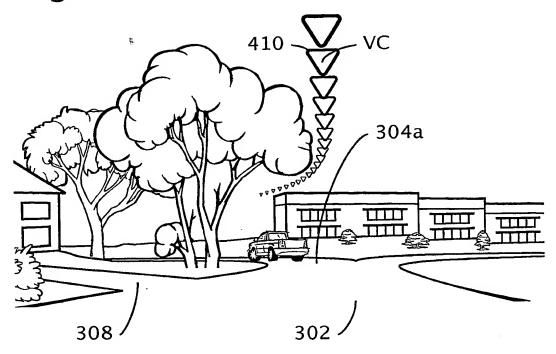
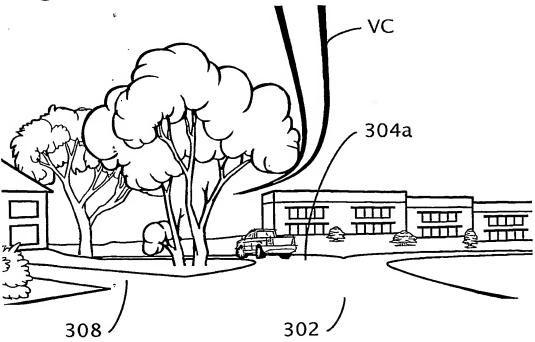
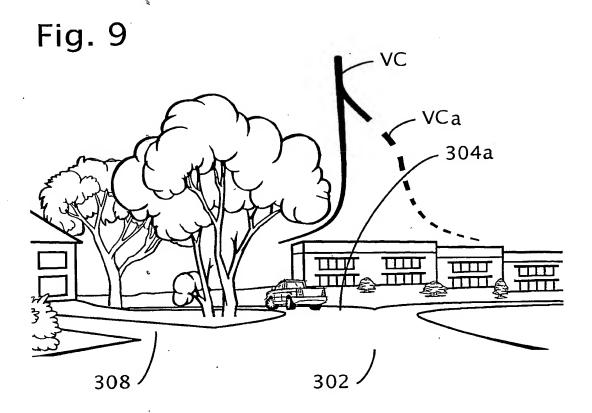
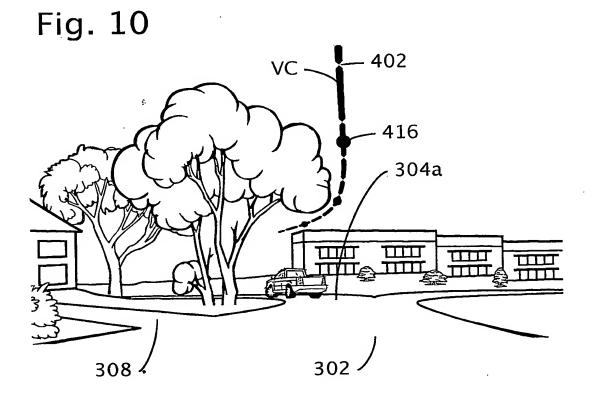


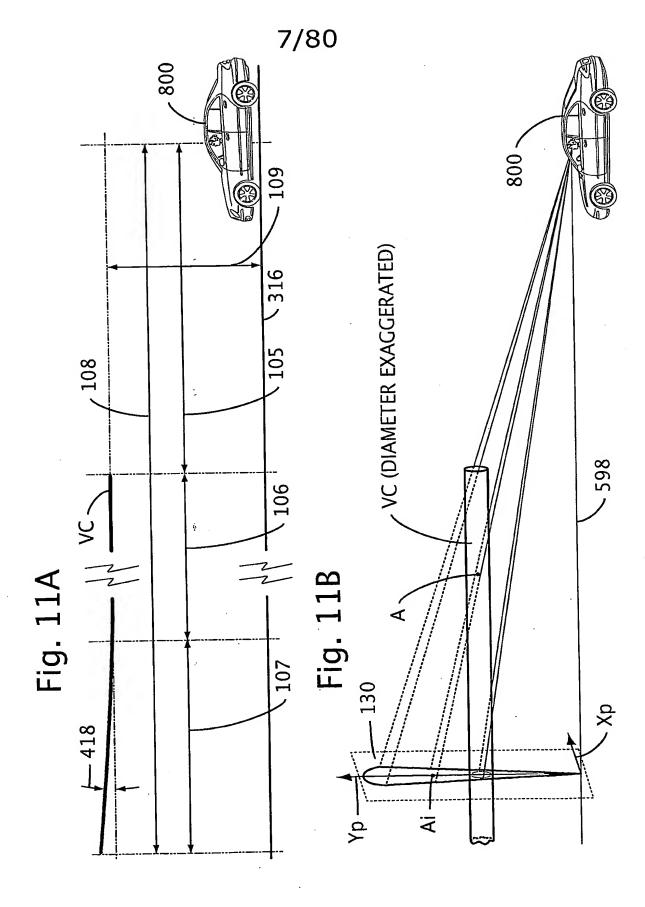
Fig. 8

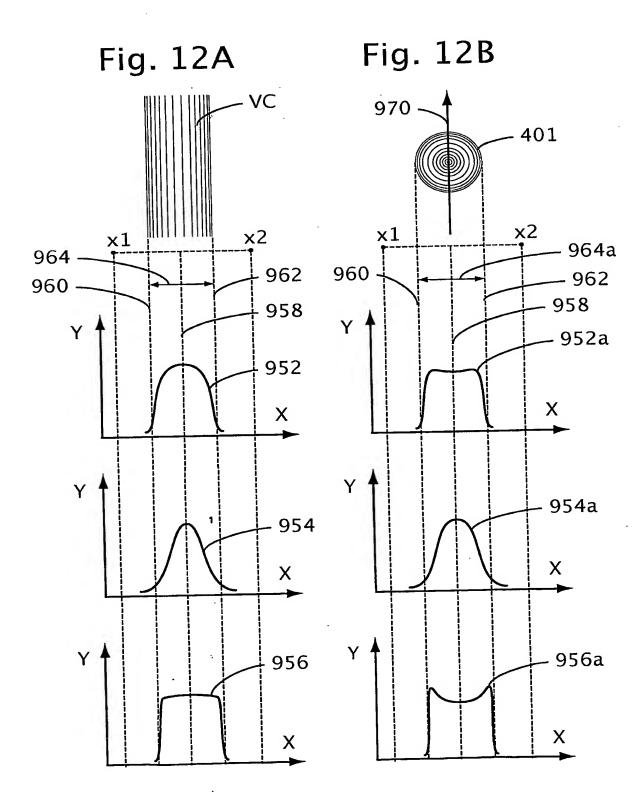


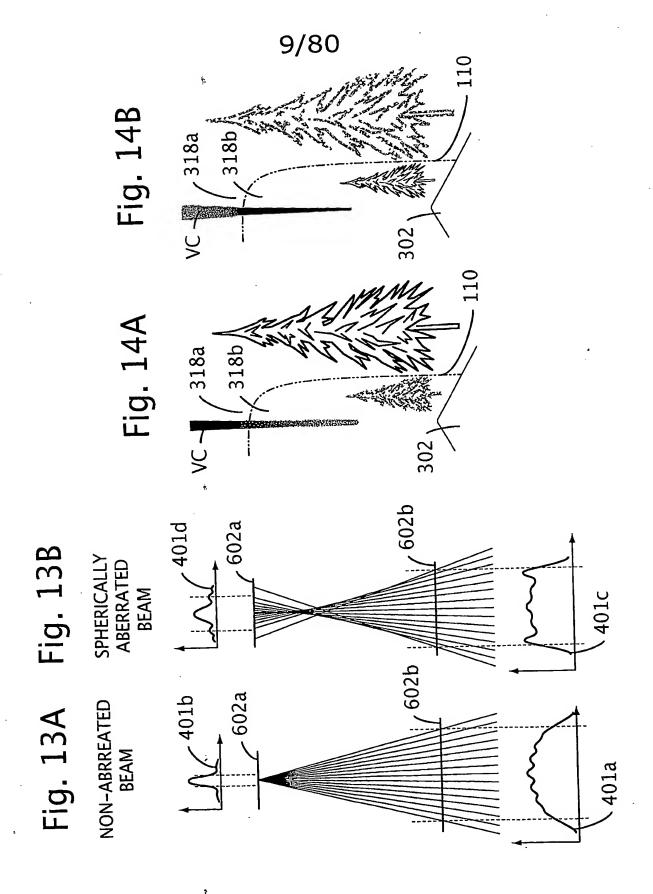
6/80

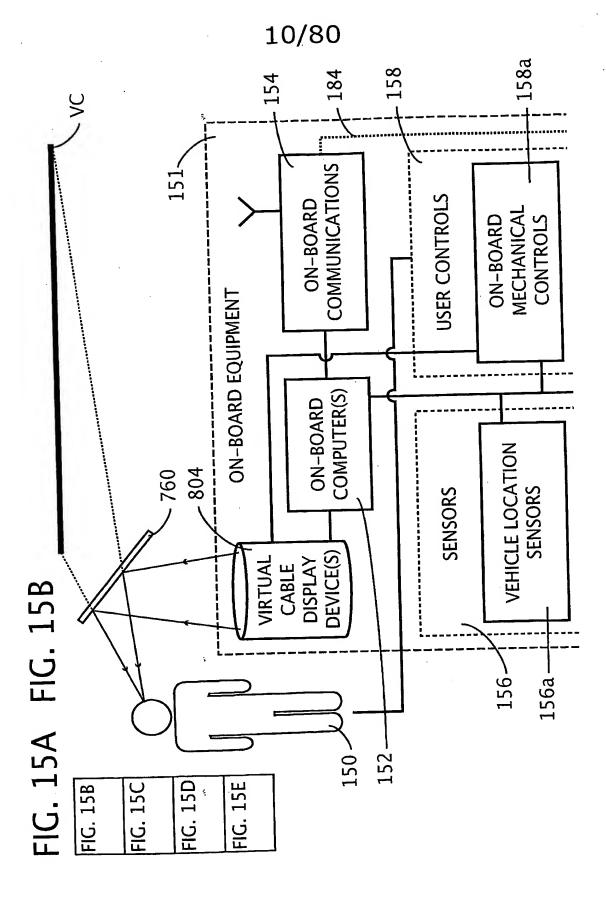


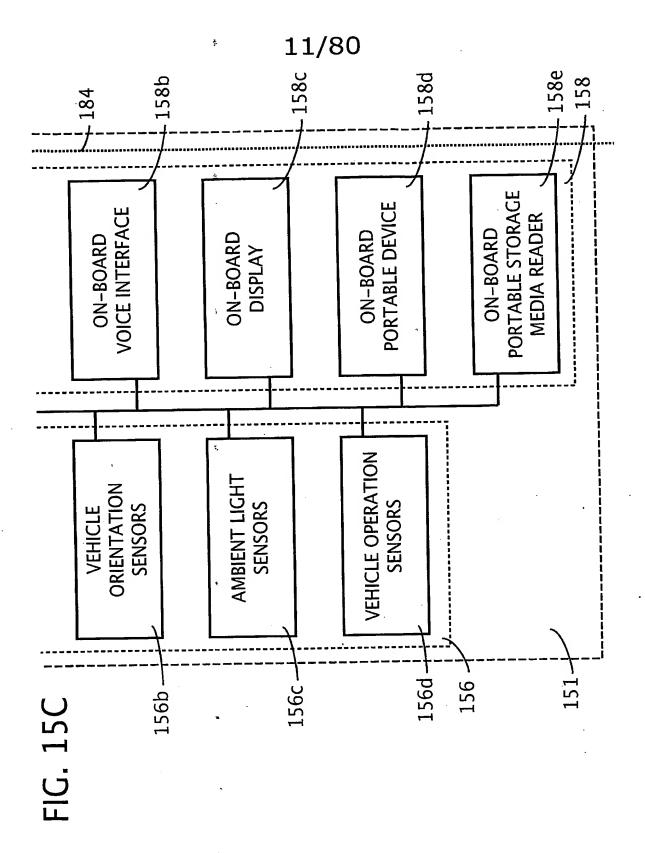


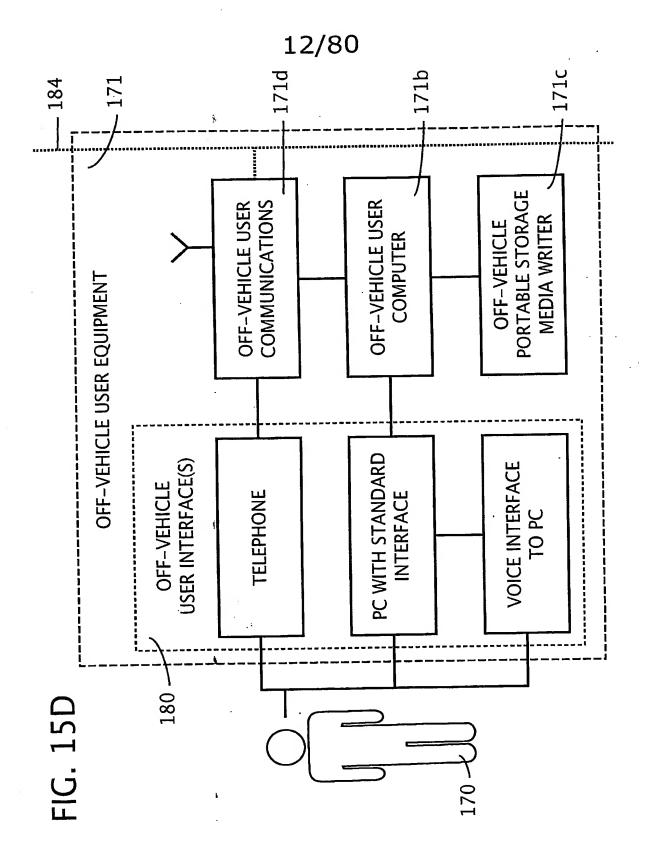




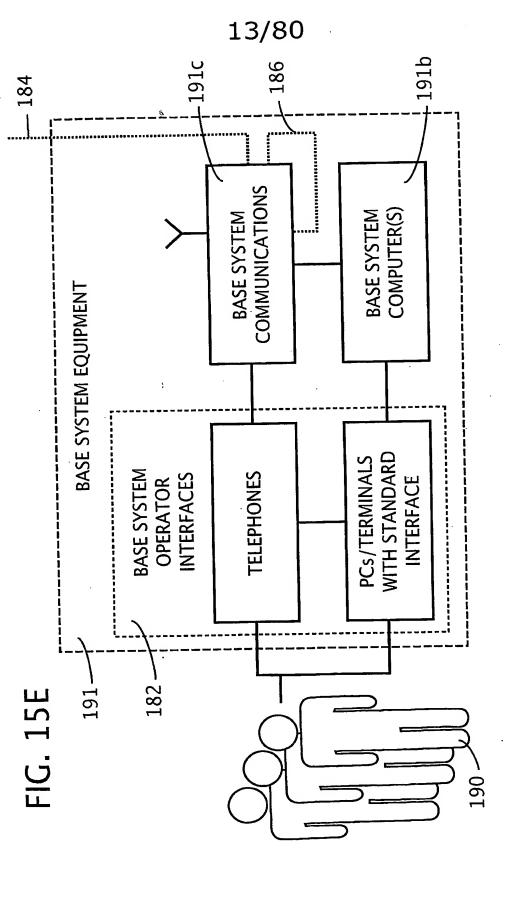








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Fig. 16A

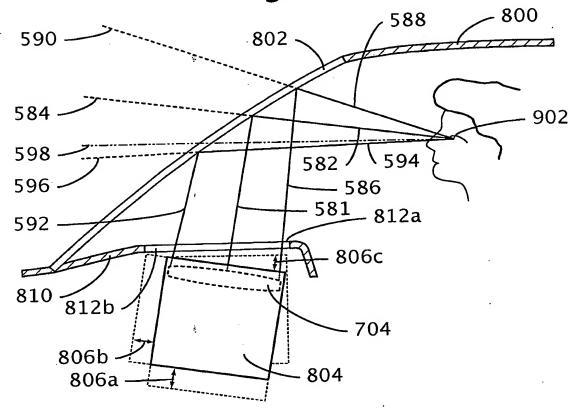
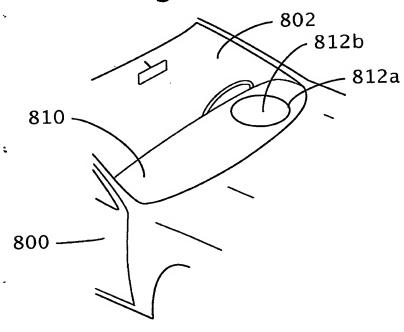


Fig. 16B



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15/80 Fig. 17A

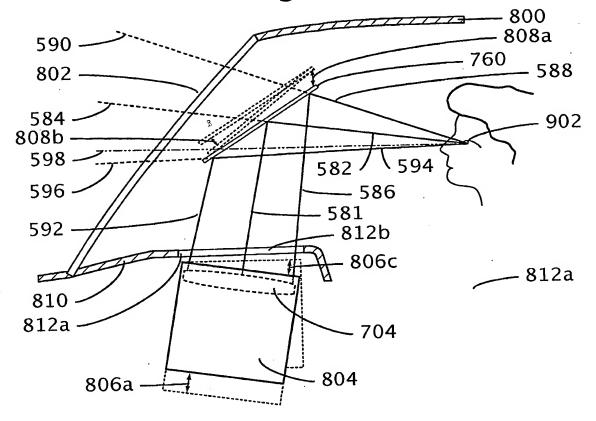
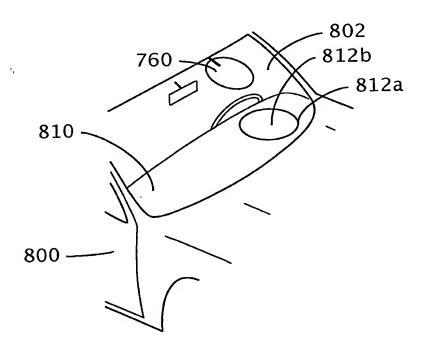


Fig. 17B



16/80 Fig. 18A

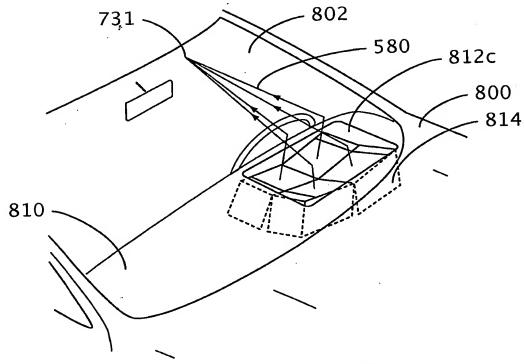
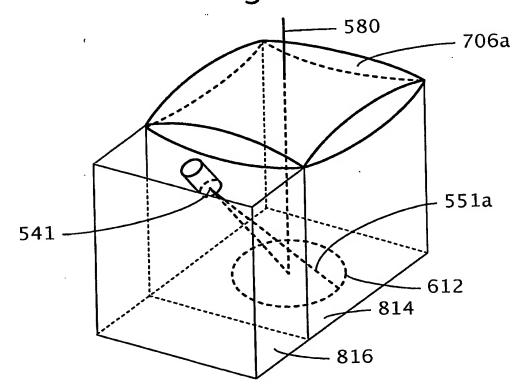
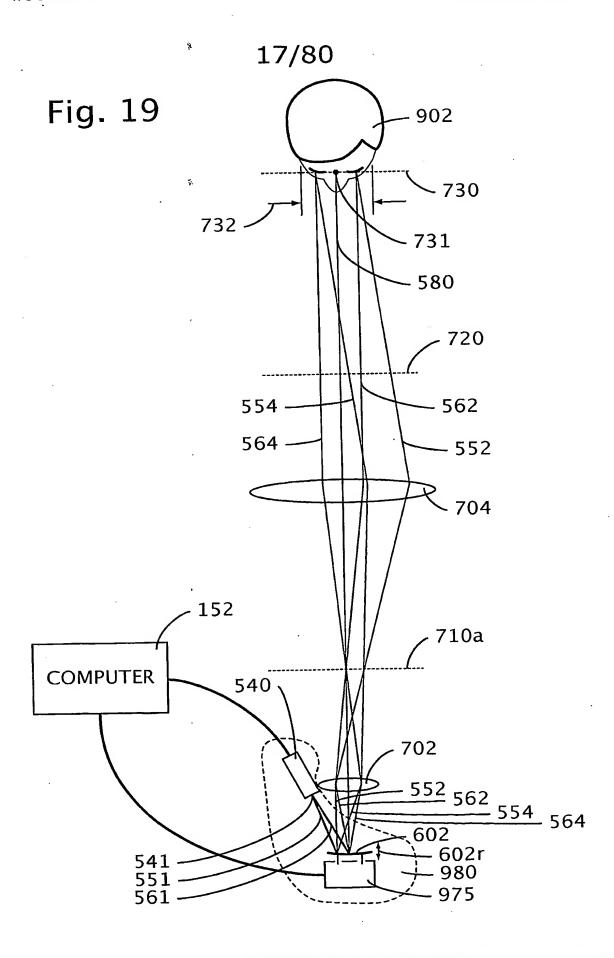
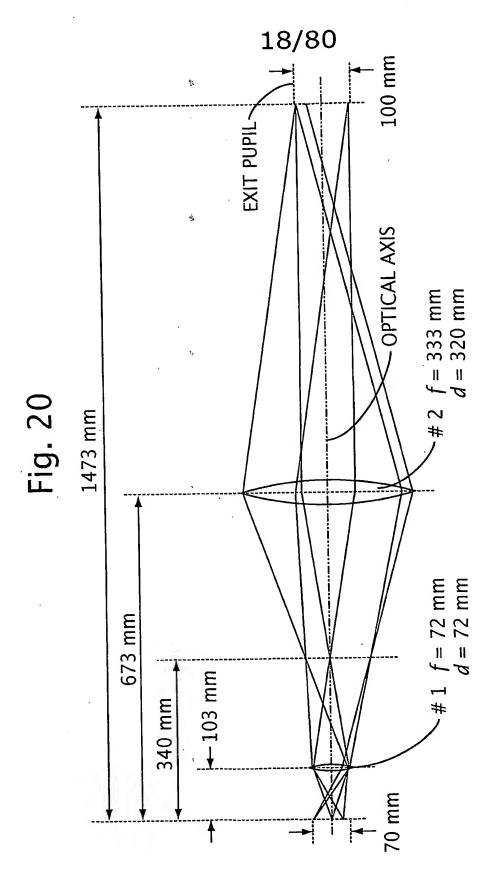
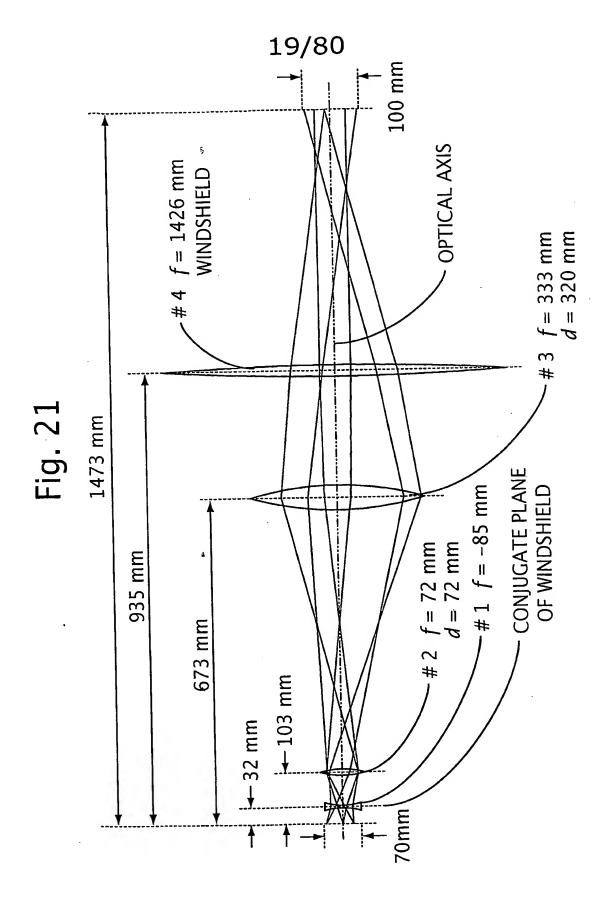


Fig. 18B









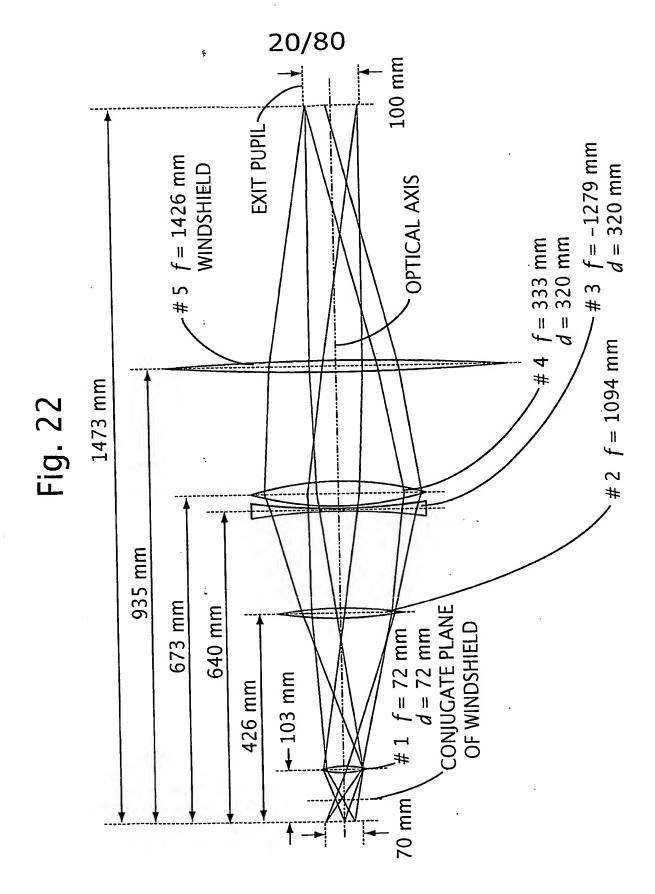
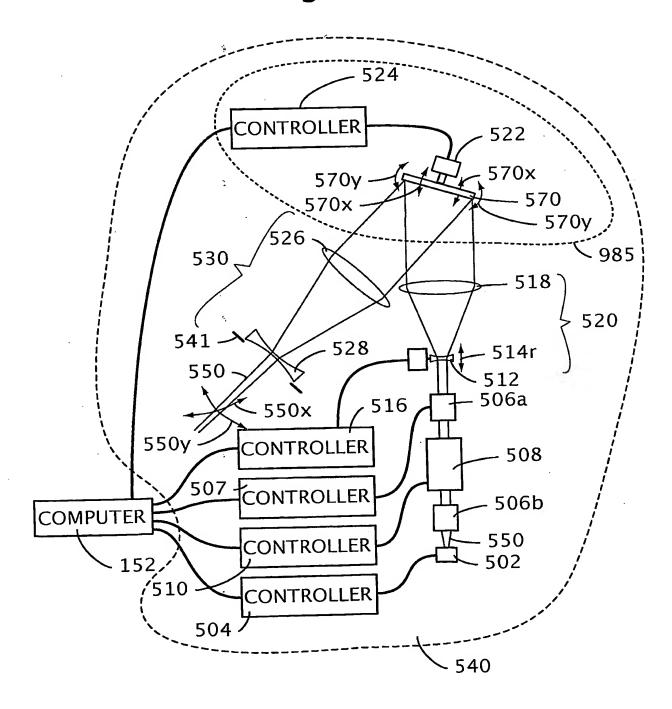
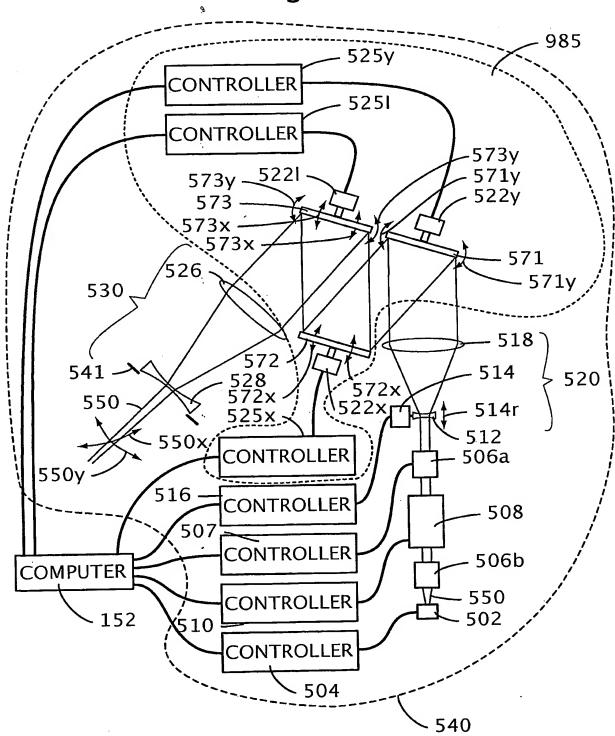
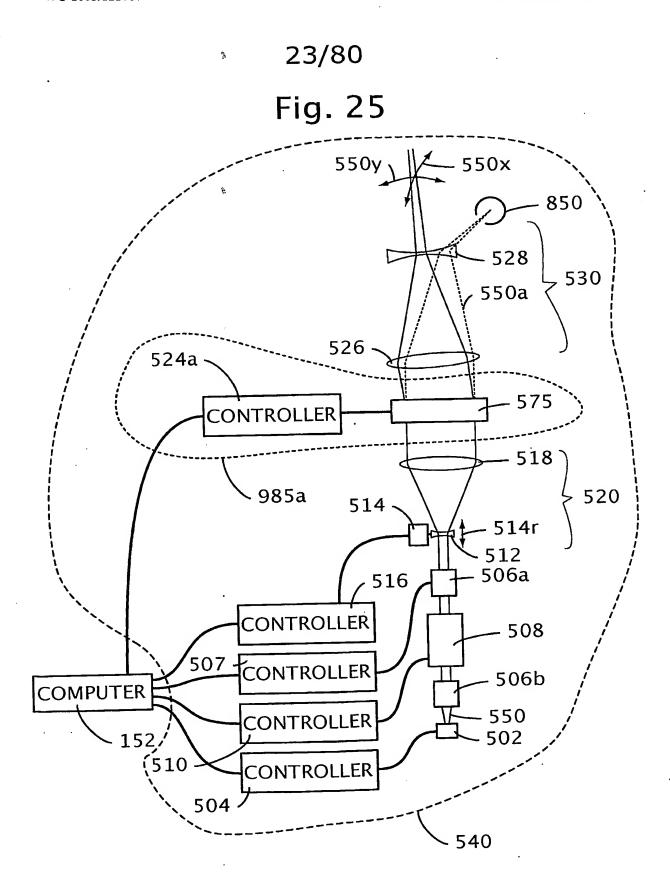


Fig. 23

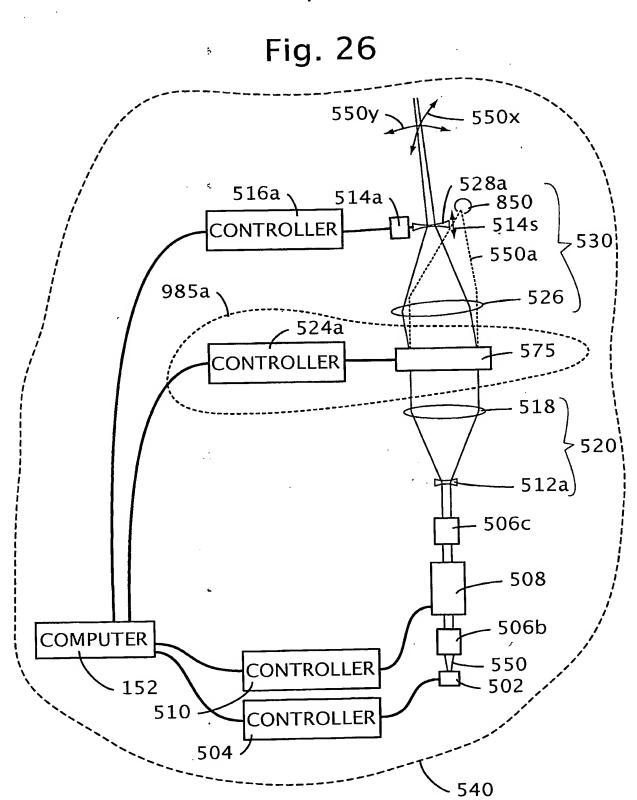


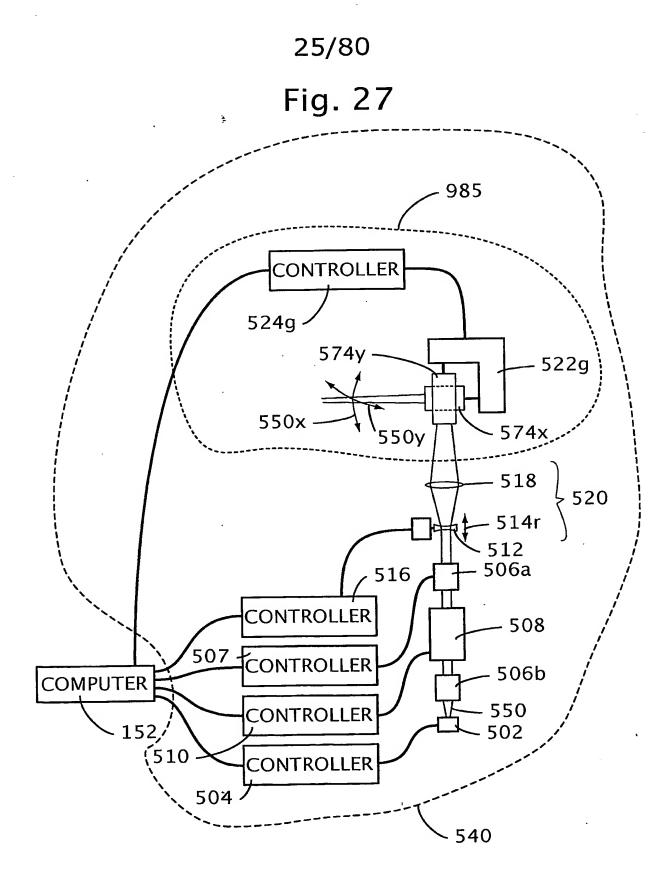
22/80 Fig. 24





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26/80

Fig. 28

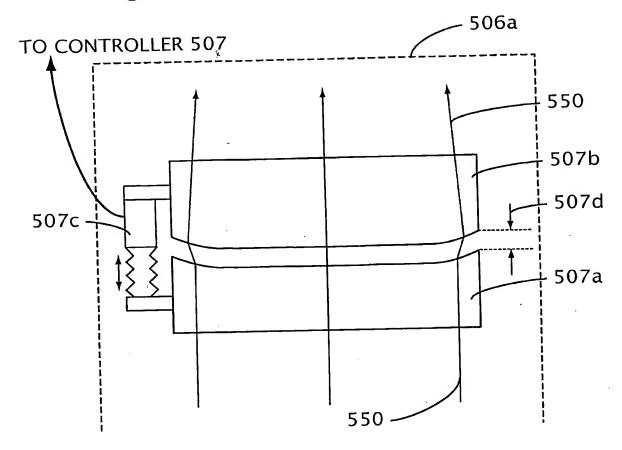


Fig. 29

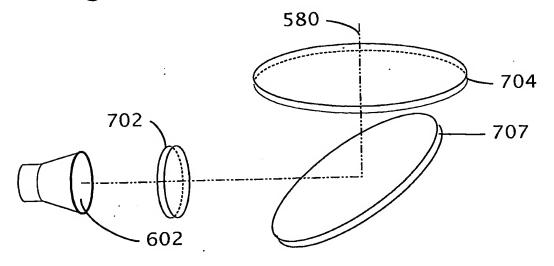


Fig. 30Å

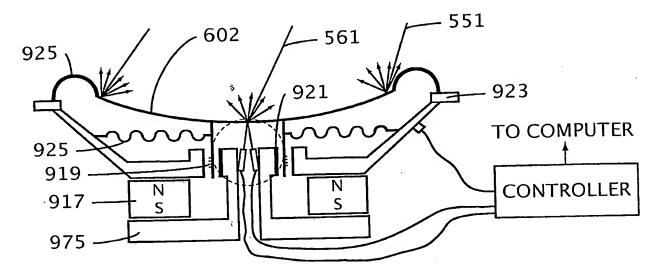


Fig. 30B

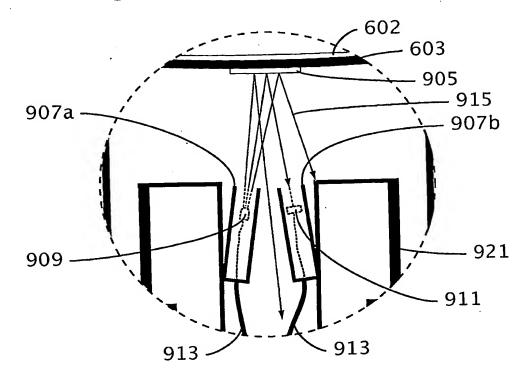


Fig. 30C

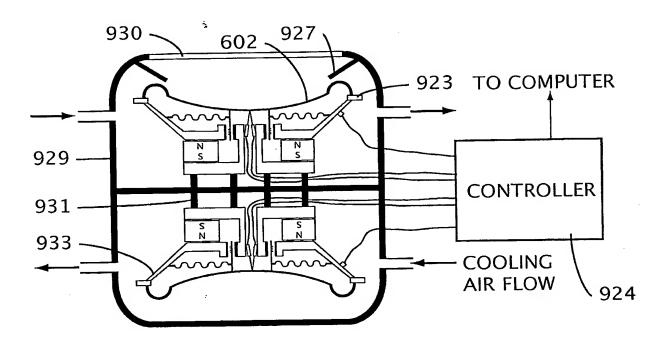


Fig. 31

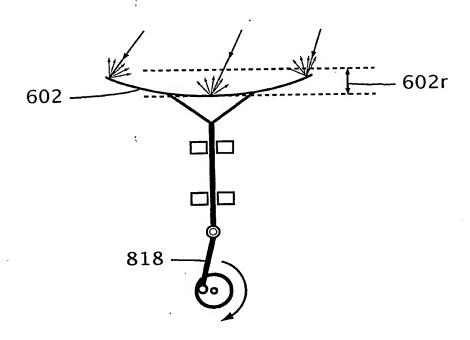
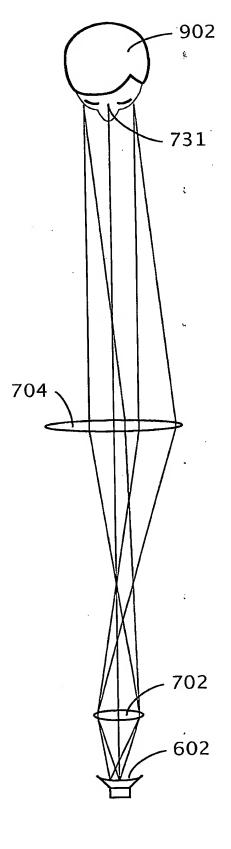
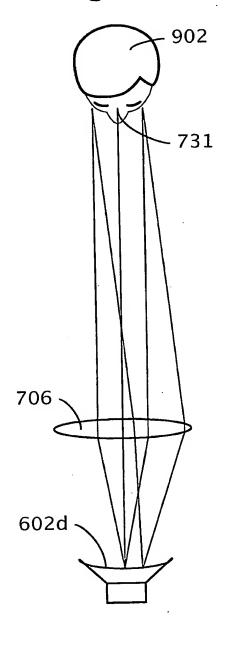


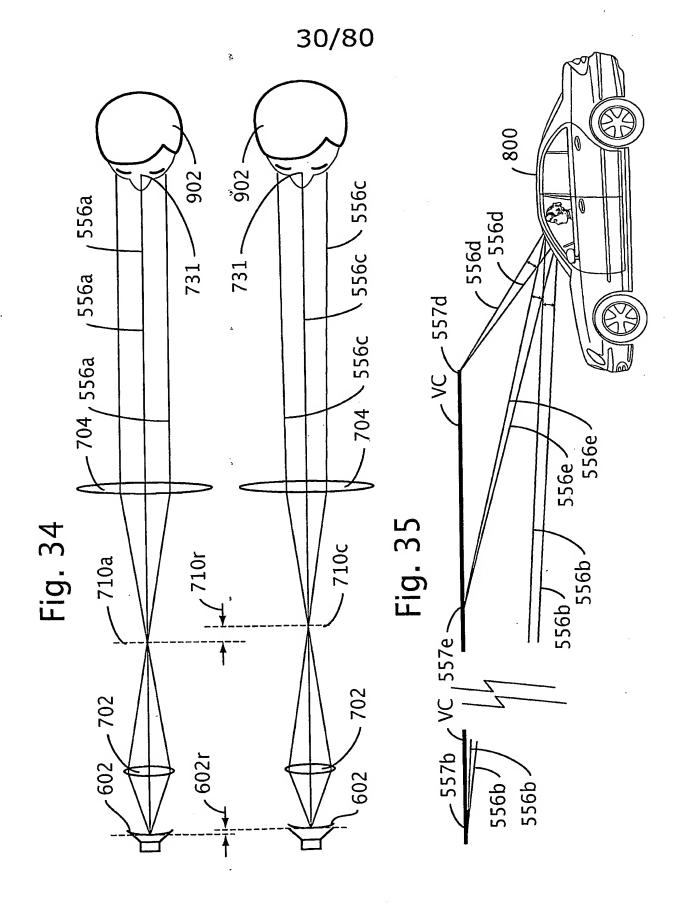
Fig. 32



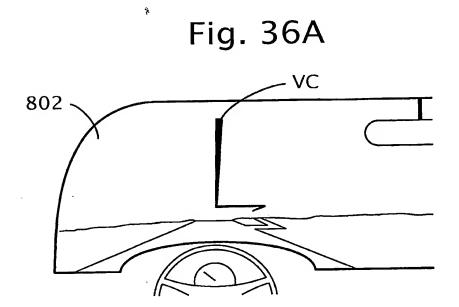
29/80

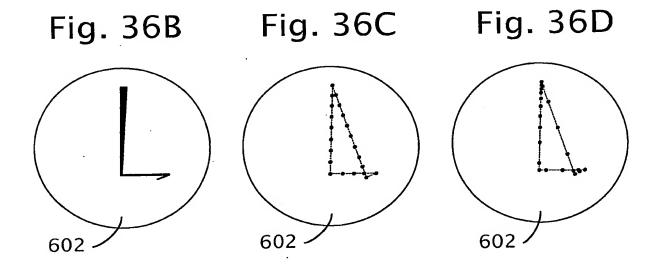
Fig. 33

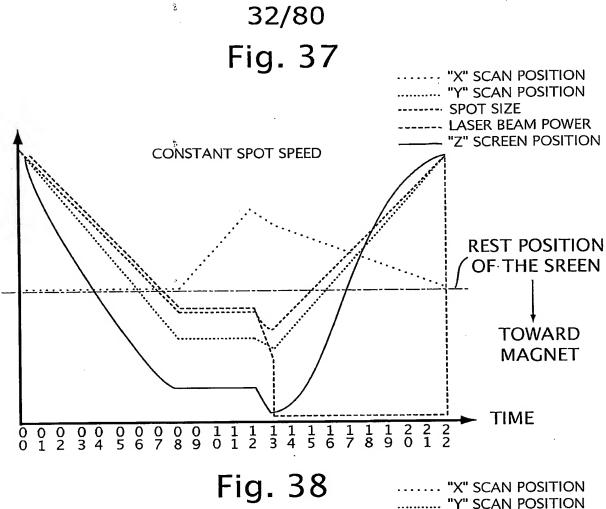


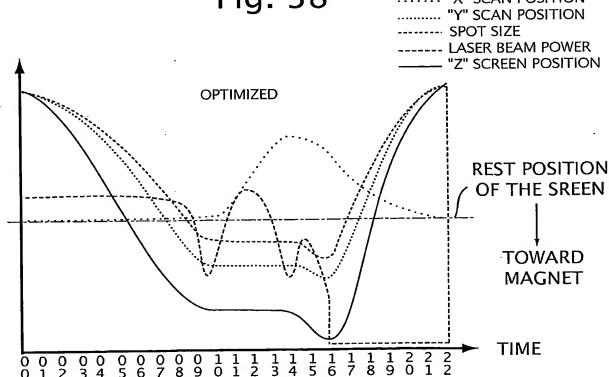


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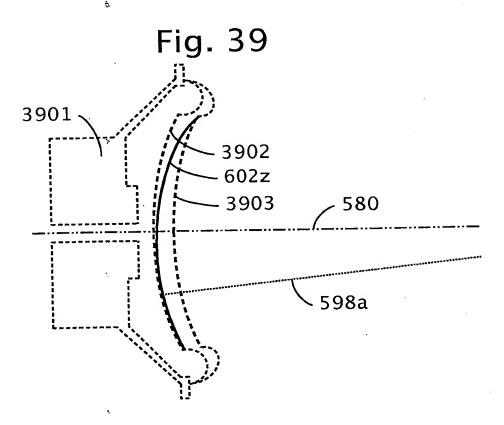


Fig. 40

4001

4005

4003

702

580

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Fig. 41

4101

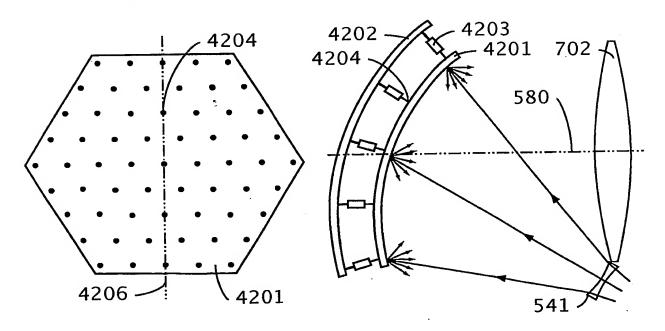
4102

702

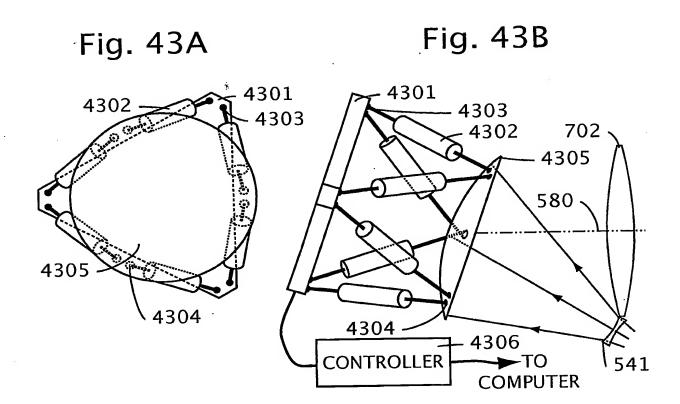
580

Fig. 42A

Fig. 42B



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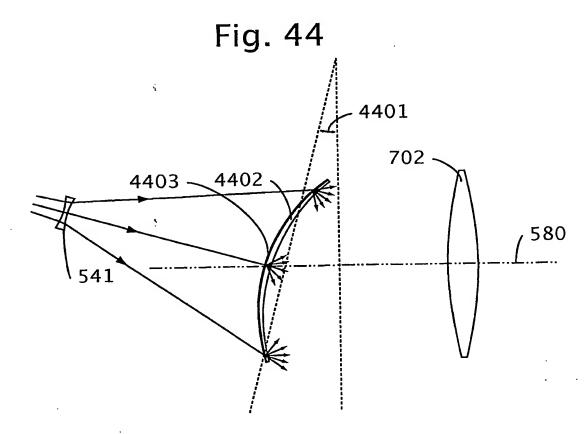


Fig. 45

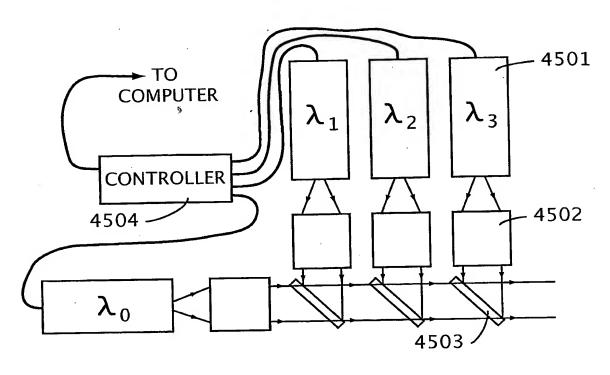
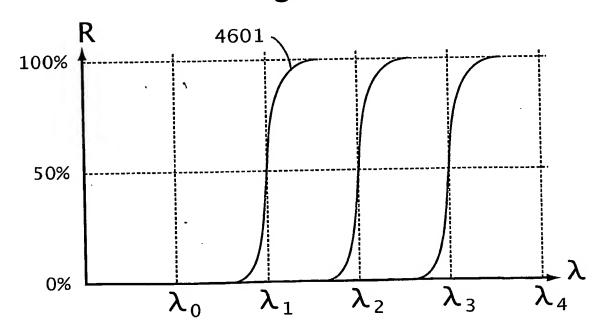


Fig. 46



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Fig. 47

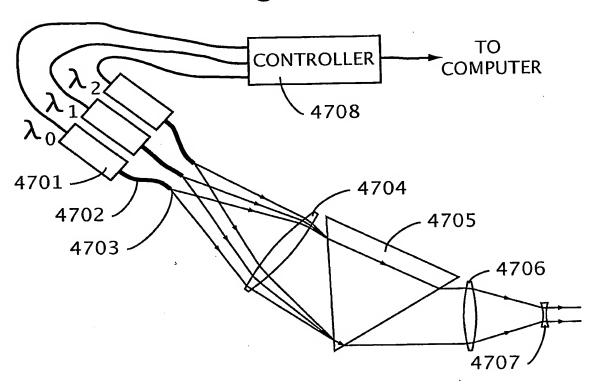


Fig. 48

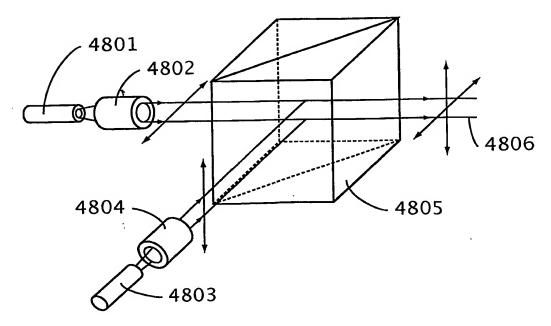


Fig. 49

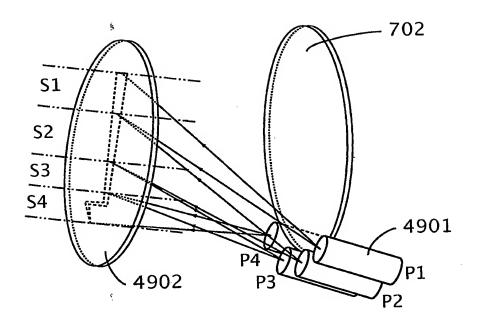
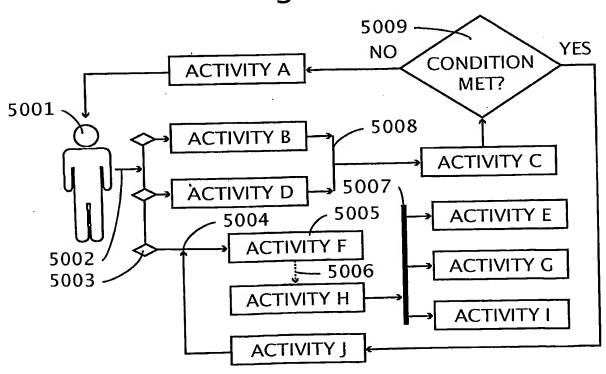


Fig. 50



158b 151 154 171 191 ON-BOARD EQUIPMENT TURNING ON ON-BOARD EQUIPMENT ON-BOARD MECHANICAL FIG. 51B COMMUNICATIONS ON-BOARD VOICE **BASE SYSTEM** OFF-VEHICLE EQUIPMENT ON-BOARD EQUIPMENT CONTROLS INTERFACE **USER'S** 670 (150 OR 170) BASE — SYSTEM OPERATOR USER — FIG. 51A FIG. 51D FIG. 51E FIG. 51F FIG. 51B FIG. 51C

FIG. 51C

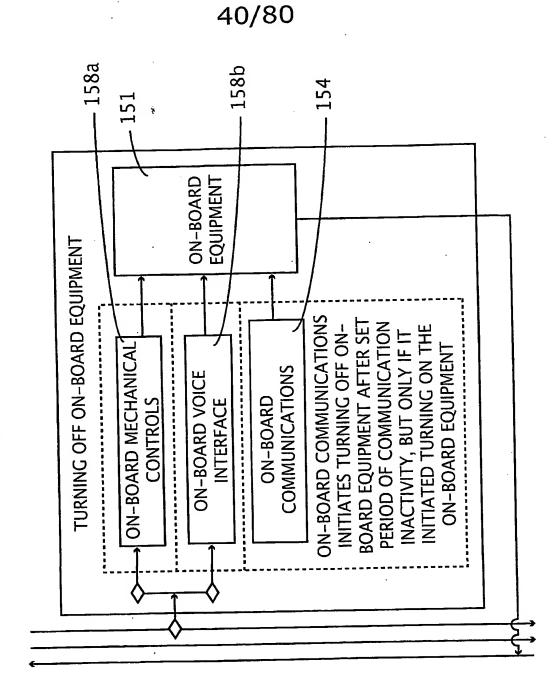


FIG. 51D

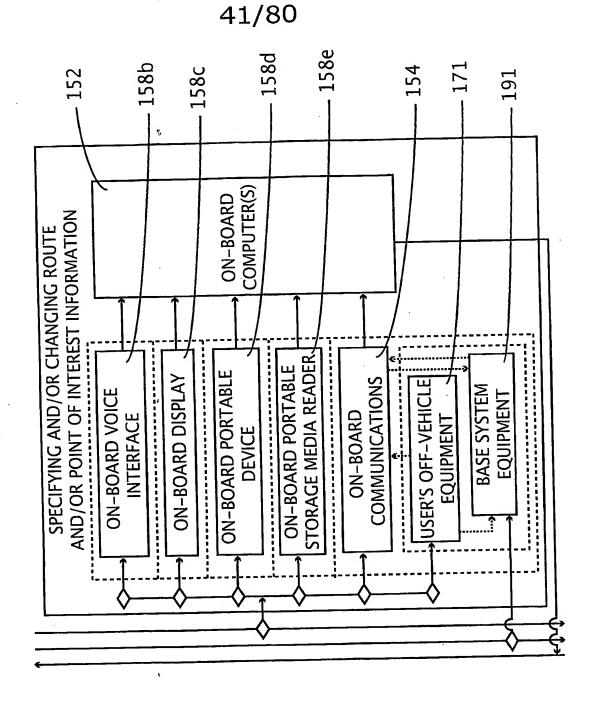


FIG. 51E

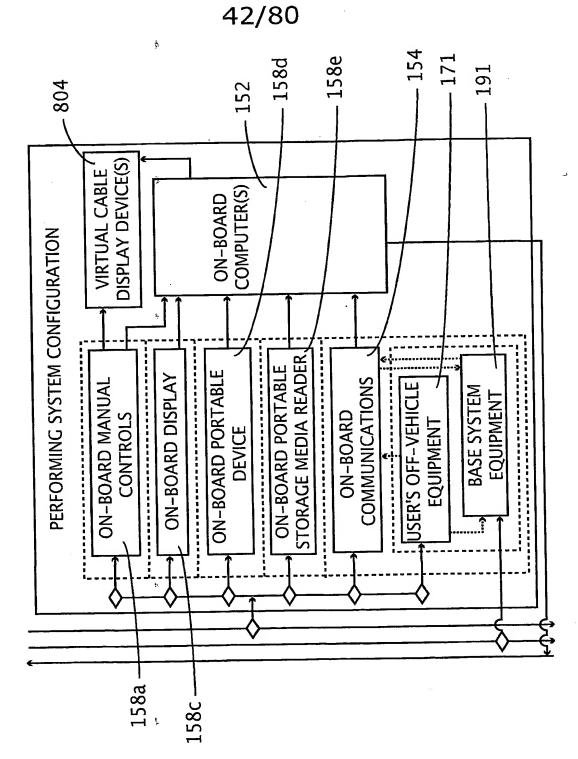
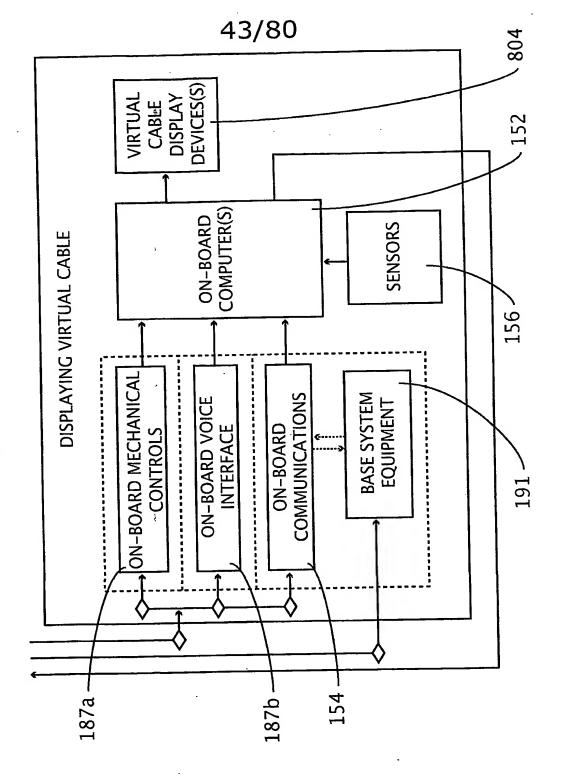
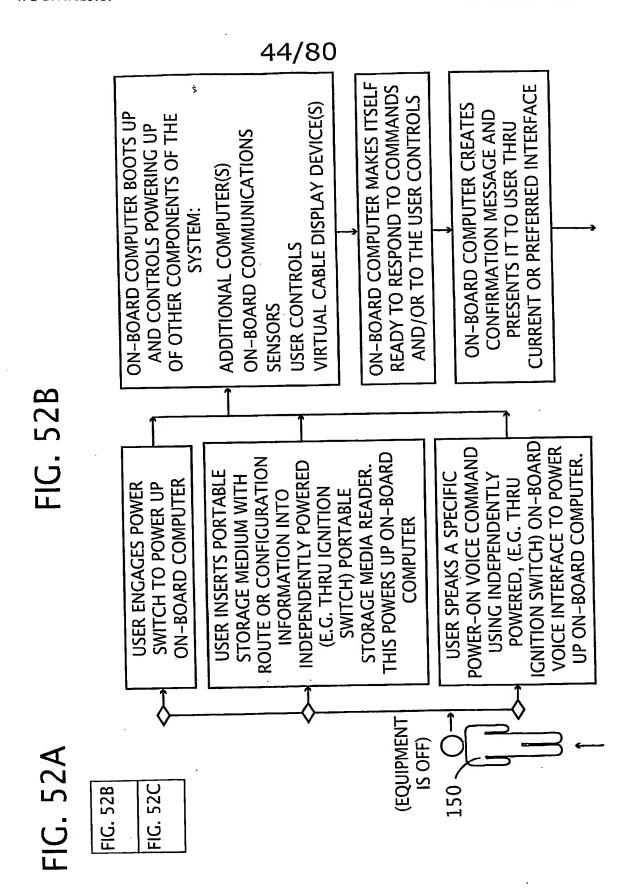
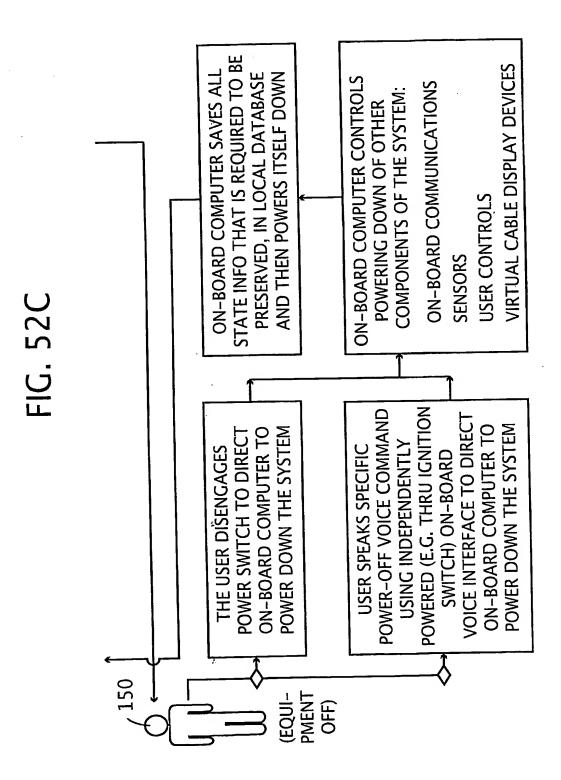
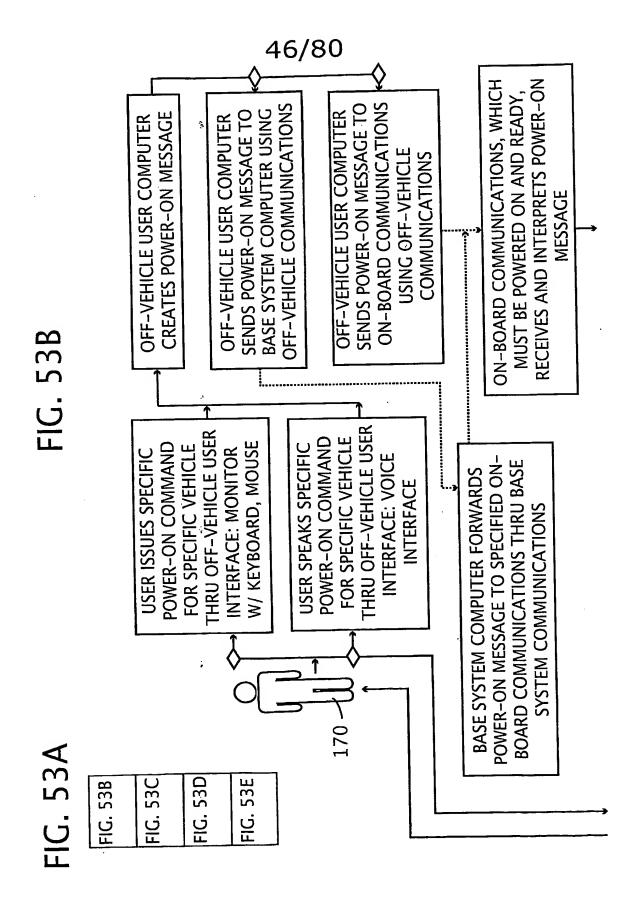


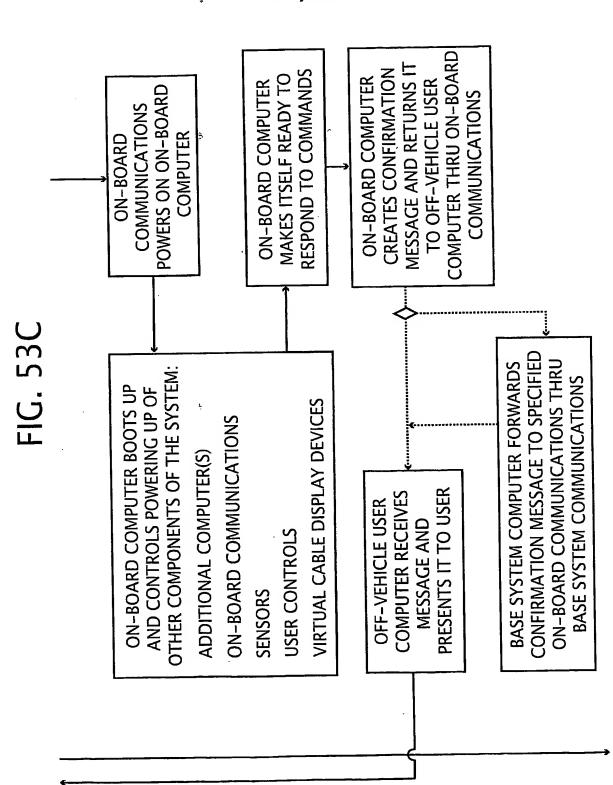
FIG. 51F



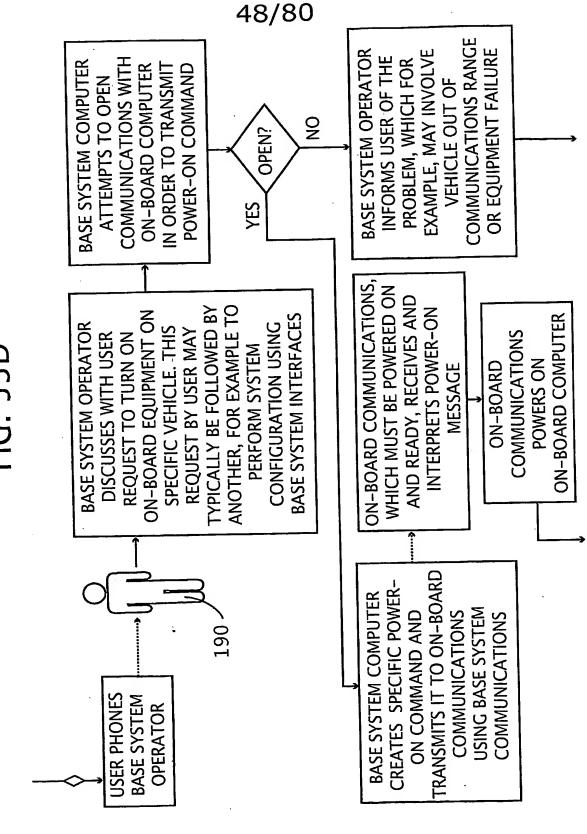


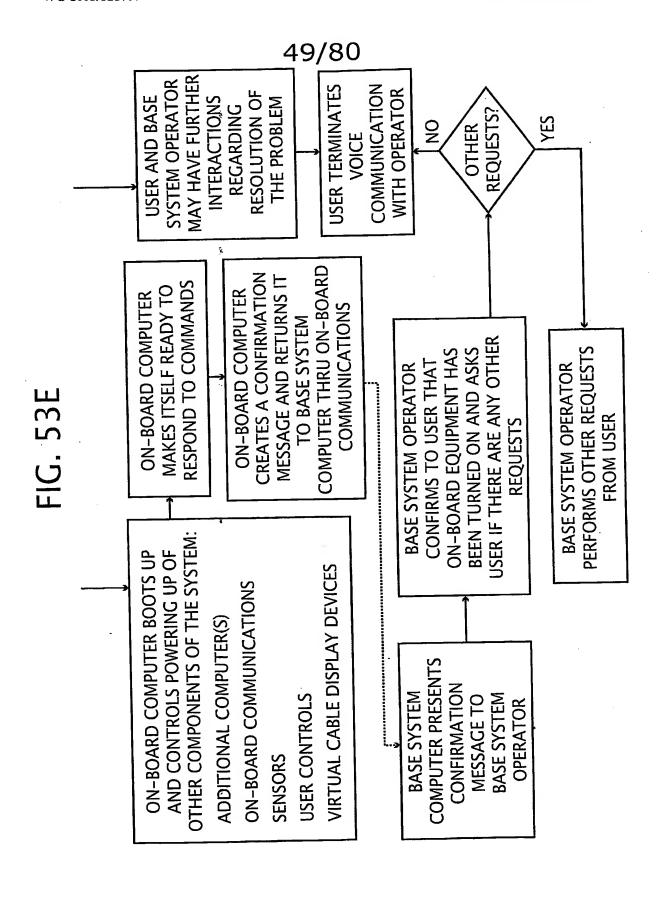




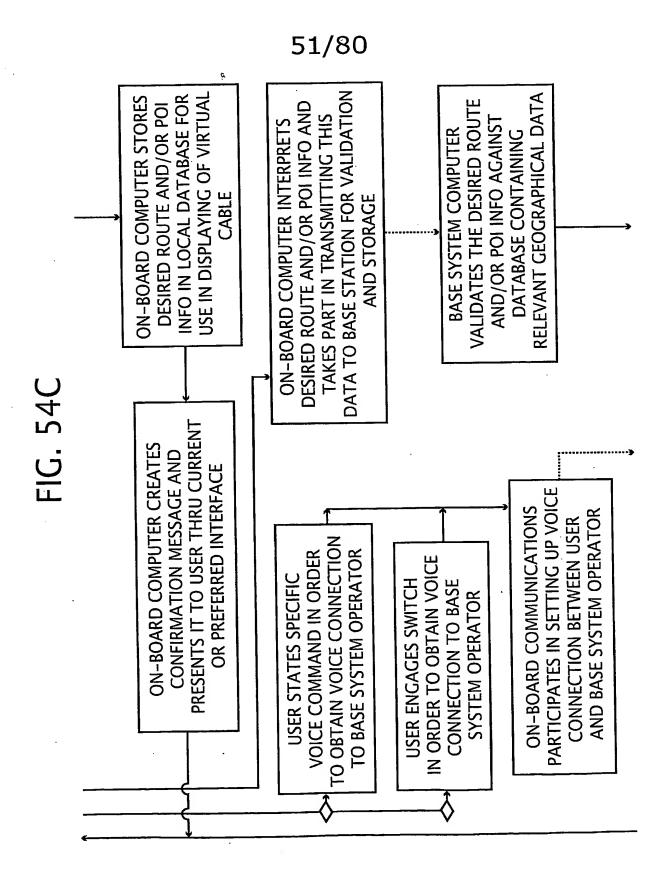


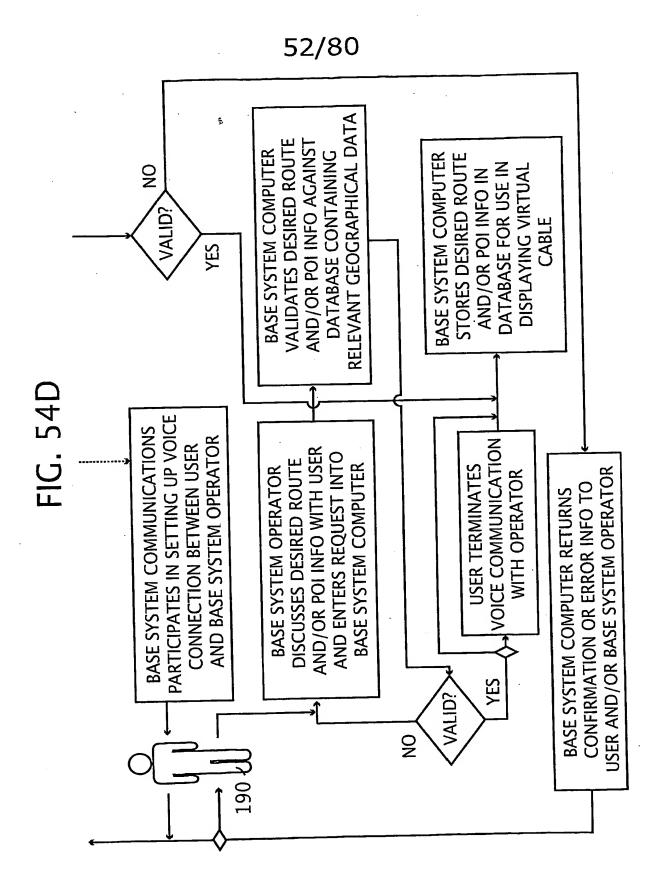


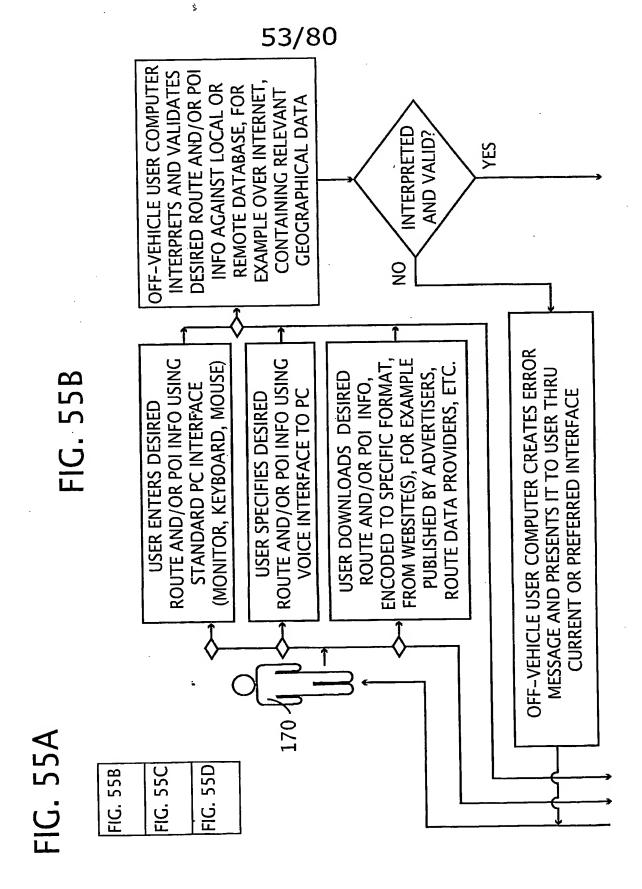


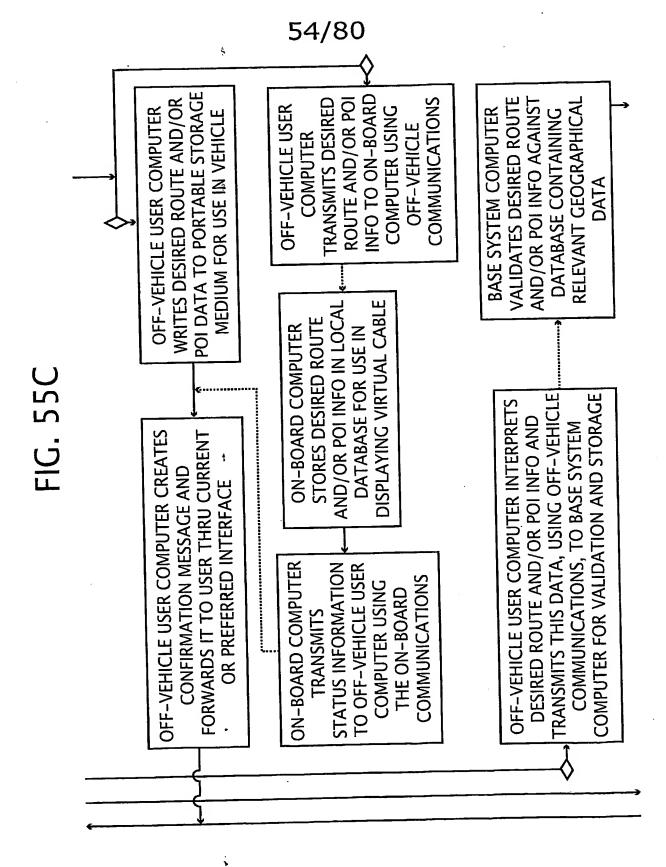


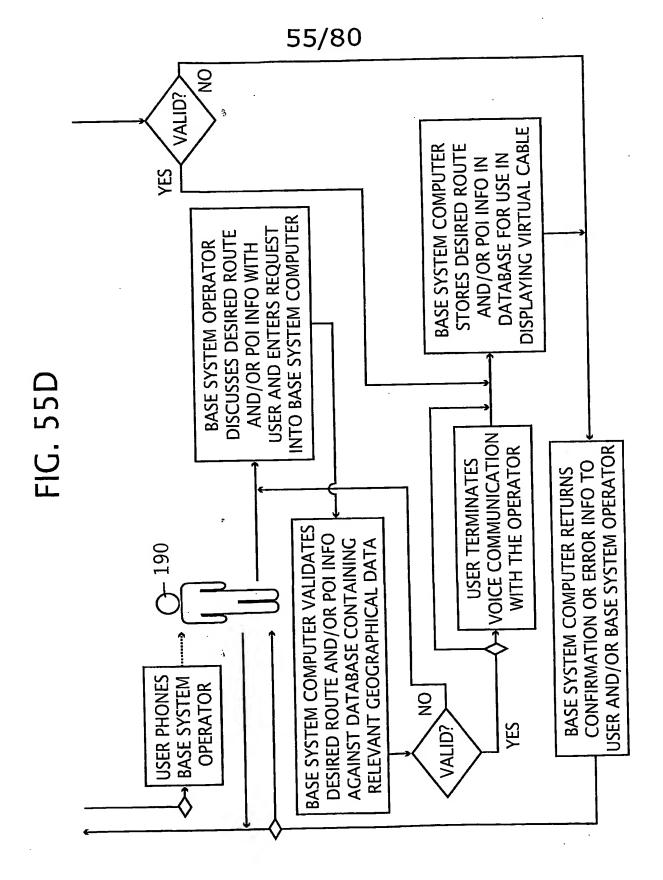
50/80 **INTERPRETS AND VALIDATES** DESIRED ROUTE AND/OR RELEVANT GEOGRAPHICAL POI INFO AGAINST LOCAL DATABASE CONTAINING ON-BOARD COMPUTER INTERPRETED AND VALID? YES DATA 9 ON-BOARD COMPUTER CREATES ERROR MESSAGE AND PRESENTS IT TO USER THRU CURRENT FIG. 54B DEVICE TO SPECIFY DESIRED USING"ON-BOARD DISPLAY ROUTE AND/OR POI INFO **USER EMPLOYS PORTABLE** ROUTE AND/OR POI INFO ROUTE AND/OR POI INFO DESIRED ROUTE AND/OR USER INSERTS PORTABLE STORAGE MEDIUM WITH **USER STATES DESIRED USER ENTERS DESIRED** POI INFORMATION OR PREFERRED INTERFACE FIG. 54A FIG. 54D FIG. 54B FIG. 54C

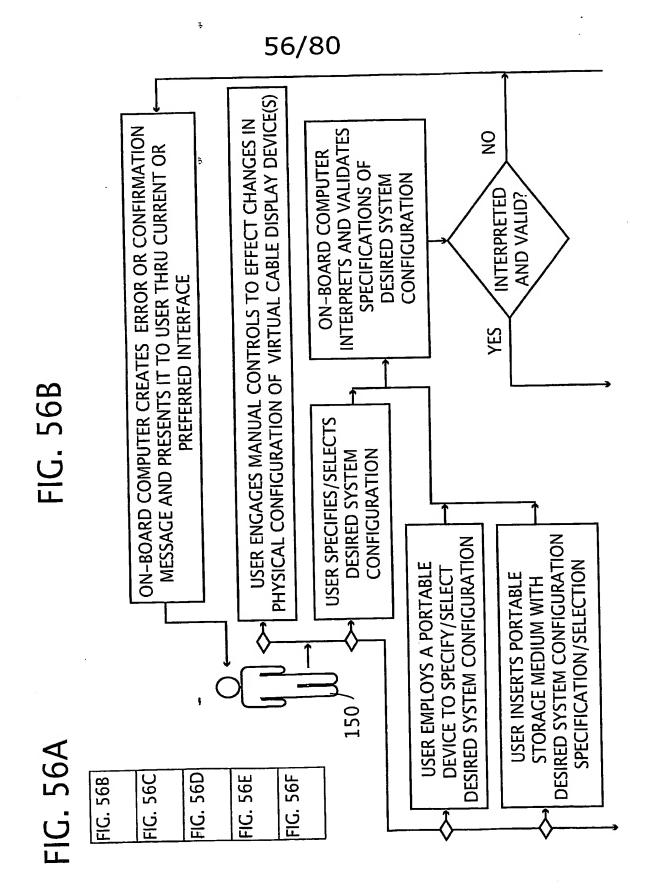


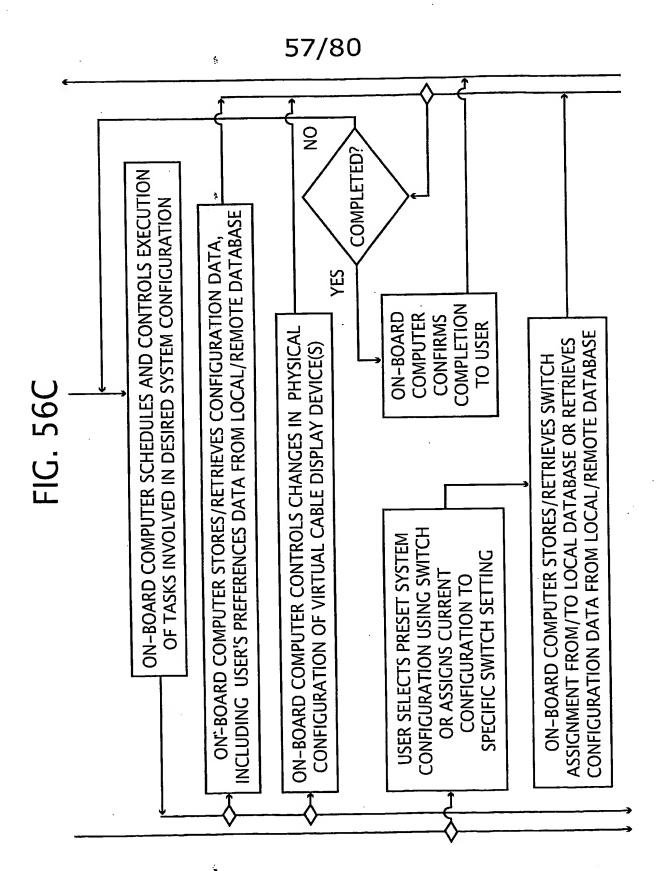


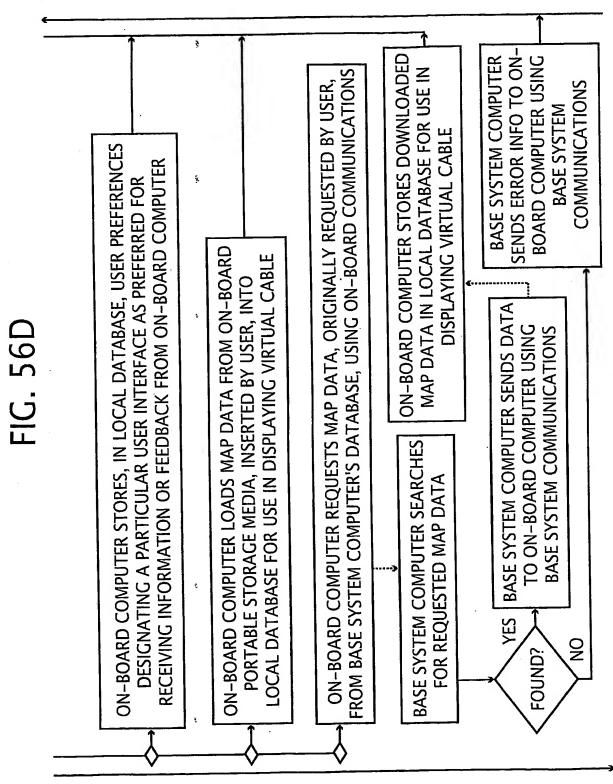


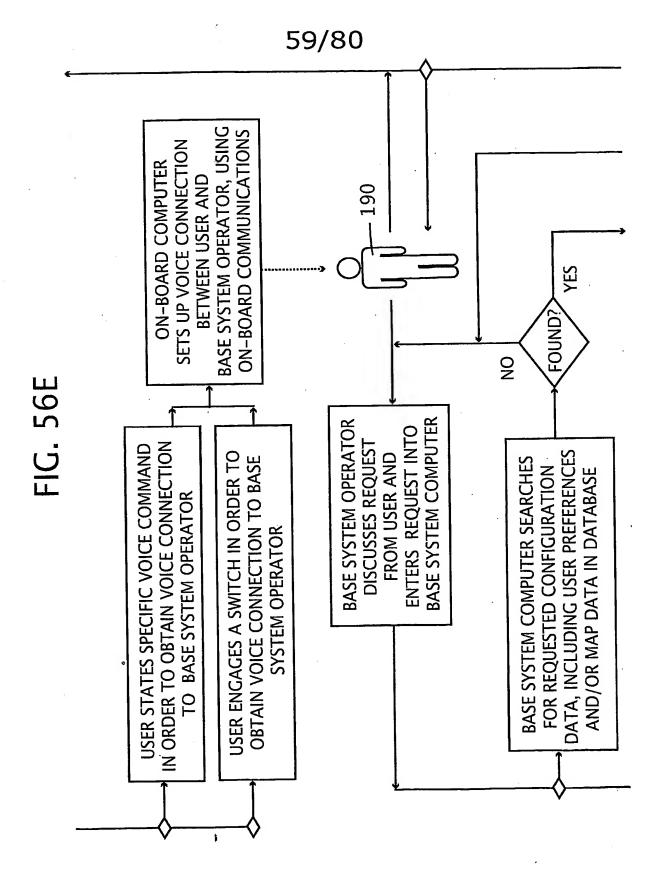


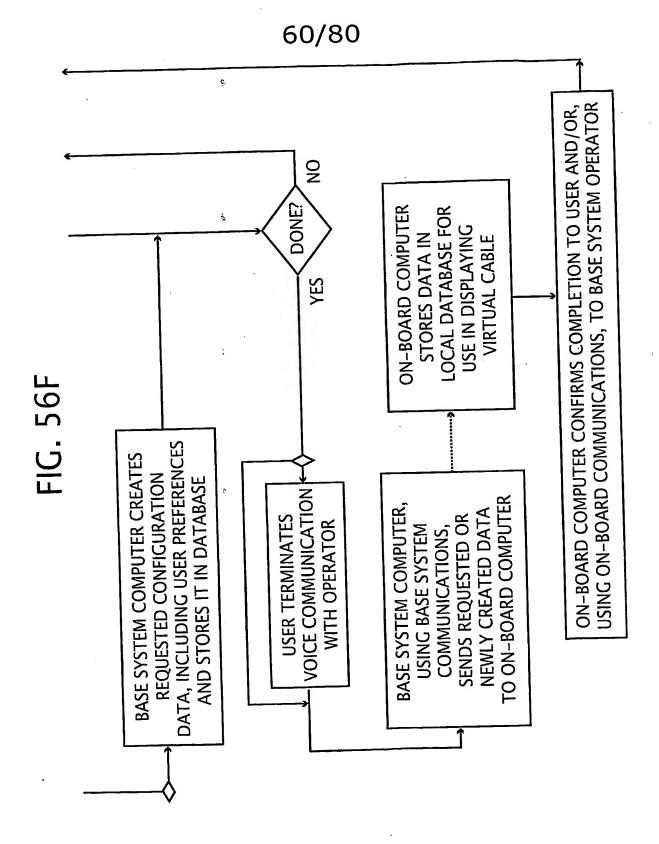




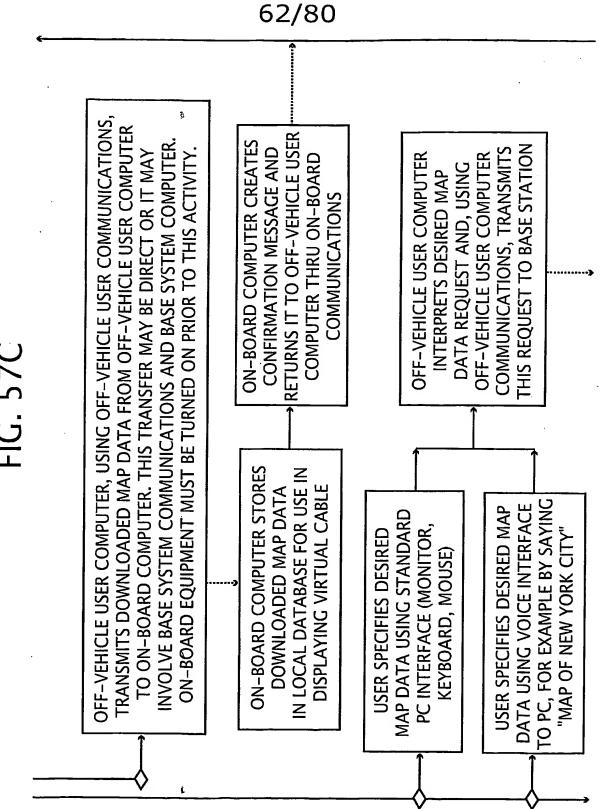


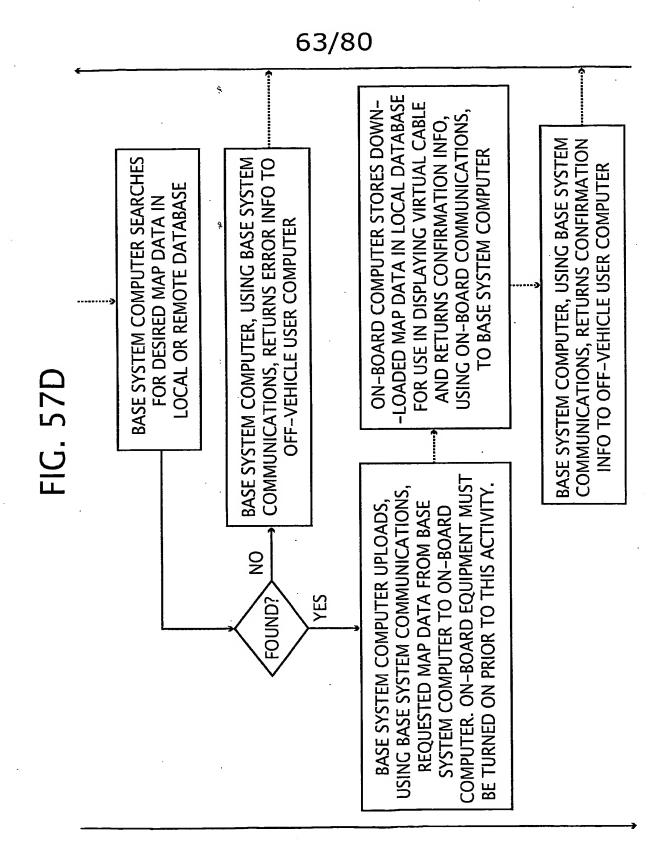


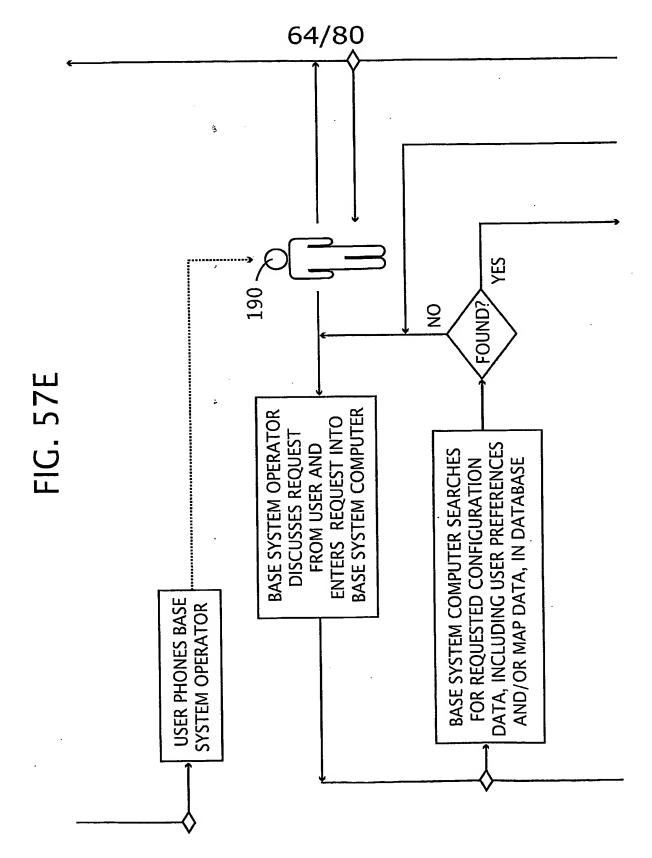


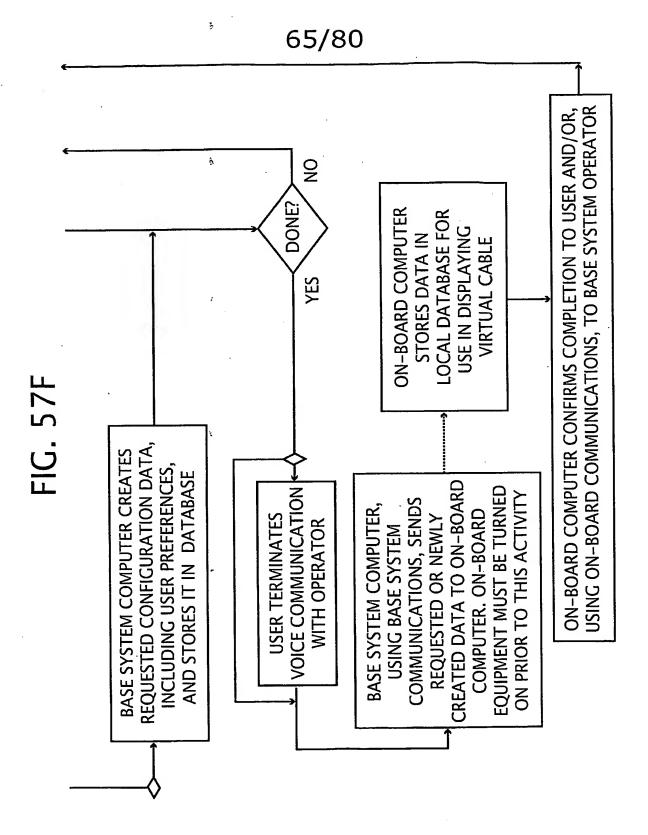


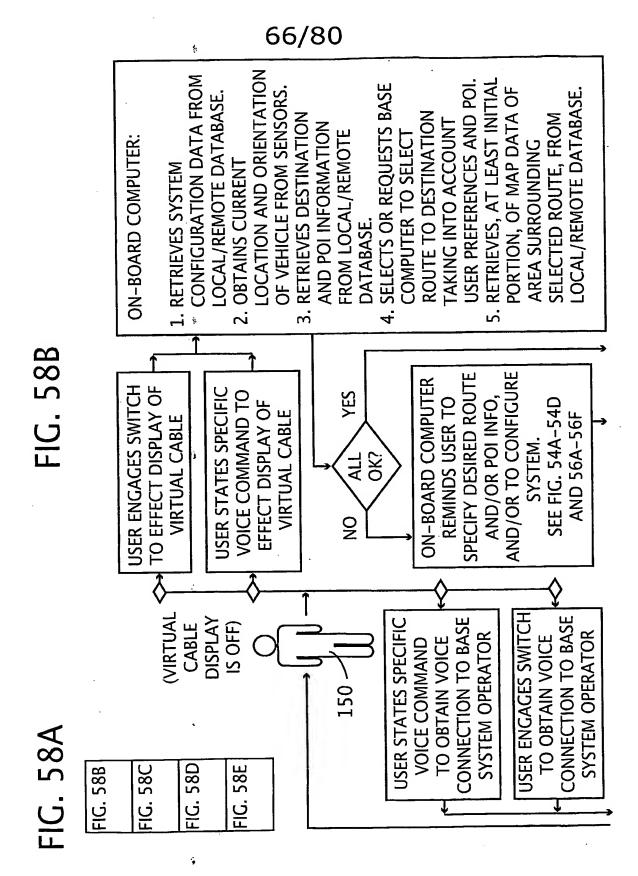
61/80 USING OFF-VEHICLE USER COMPUTER, USER DOWNLOADS FOR SAFETY AND SECURITY, OFF-VEHICLE USER COMPUTER FROM INTERNET SOME DESIRED MAP DATA ENCODED TO SPECIFIC FORMAT. DATA, FOR EXAMPLE, CAN BE FROM VALIDATES AUTHENTICITY OF DOWNLOADED MAP DATA TO-USER THRU CURRENT OR PREFERRED INTERFACE USING OFF-VEHICLE USER COMPUTER WITH PORTABLE STORAGE PORTABLE STORAGE MEDIUM (CD-ROM, FLASH MEMORY, ETC. WEBSITE PUBLISHED BY MAP DATA PROVIDER. USING PUBLIC CERTIFICATE OF DATA PROVIDER OFF-VEHICLE USER COMPUTER CREATES ERROR MEDIA WRITER, USER WRITES DOWNLOADED MAP DATA TO OR CONFIRMATION MESSAGE AND PRESENTS IT FIG. 57B 9 **AUTHENTIC?** YES **57E 57F** FIG. 57D FIG. 57B FIG. 57C FIG. FIG.

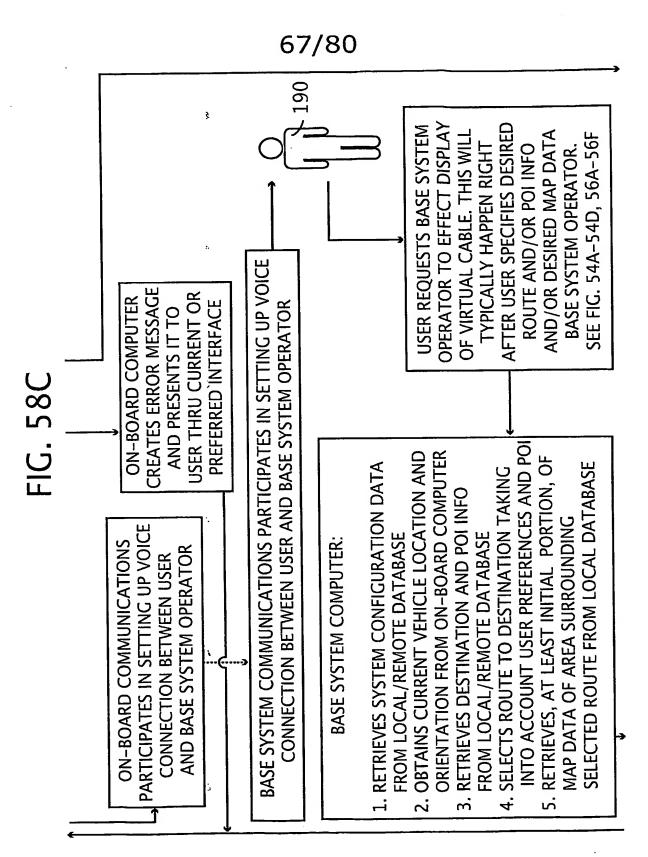


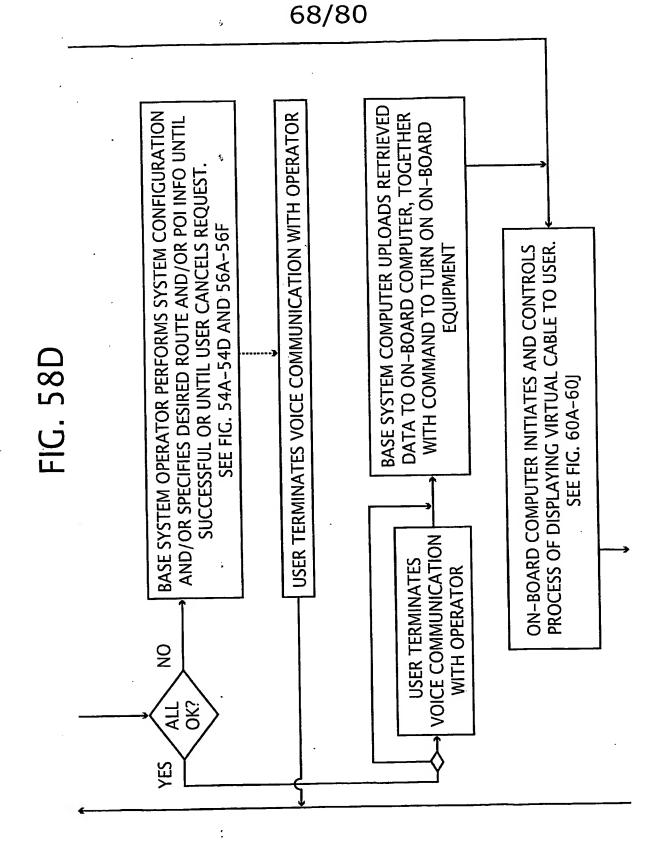


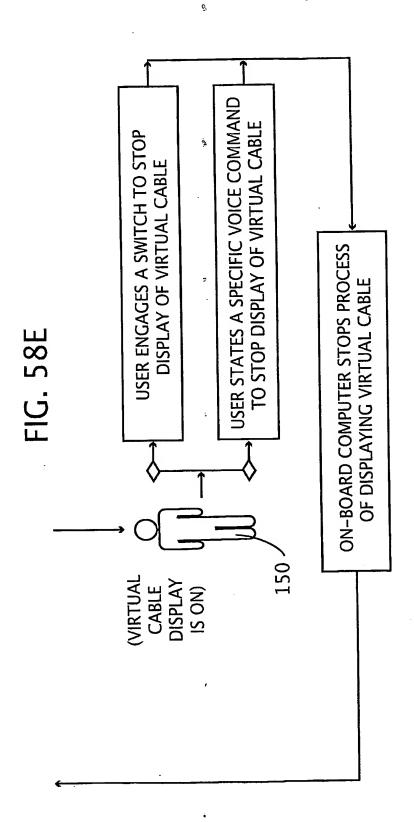


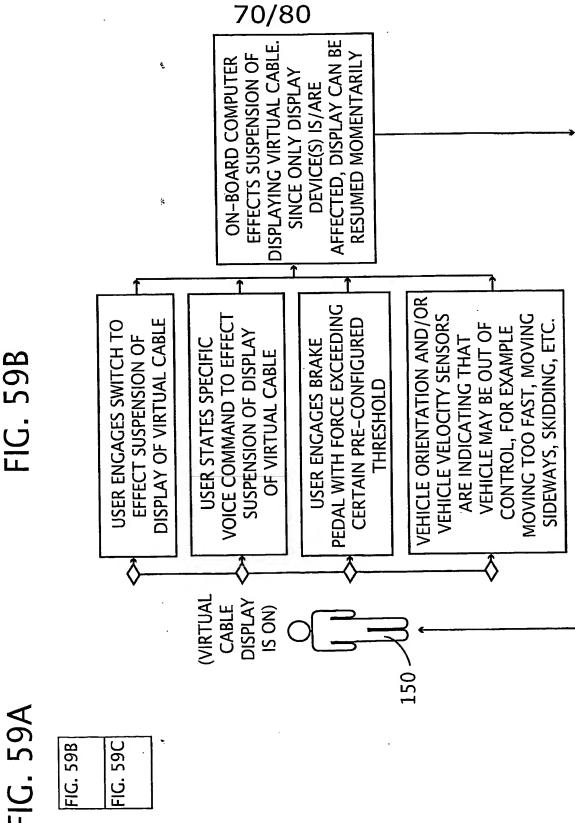


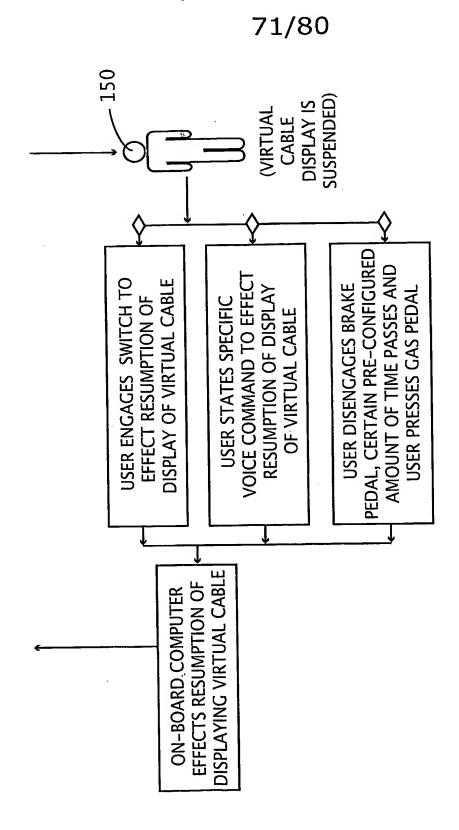


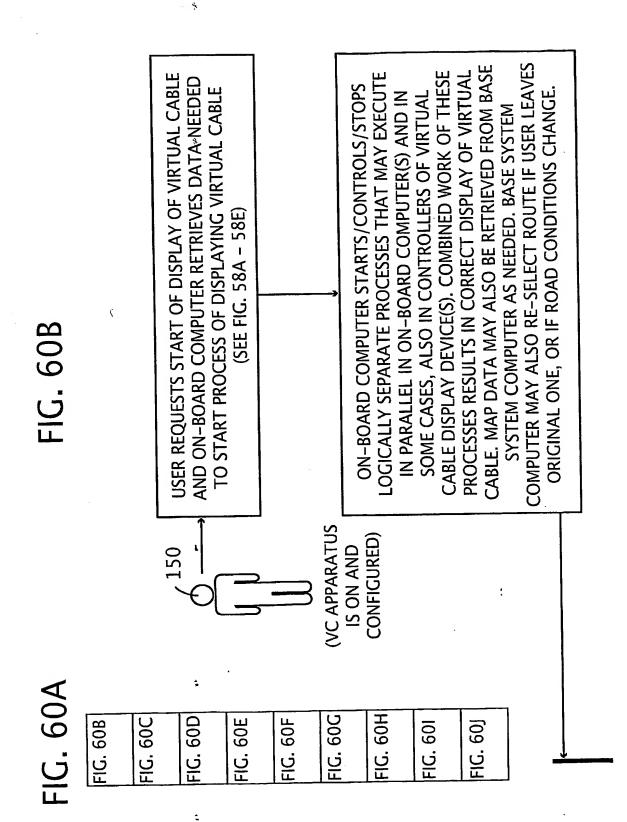












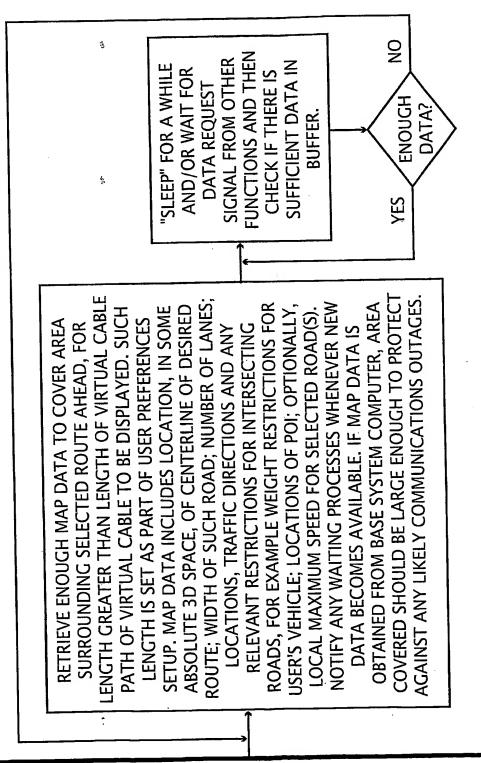


FIG. 60C

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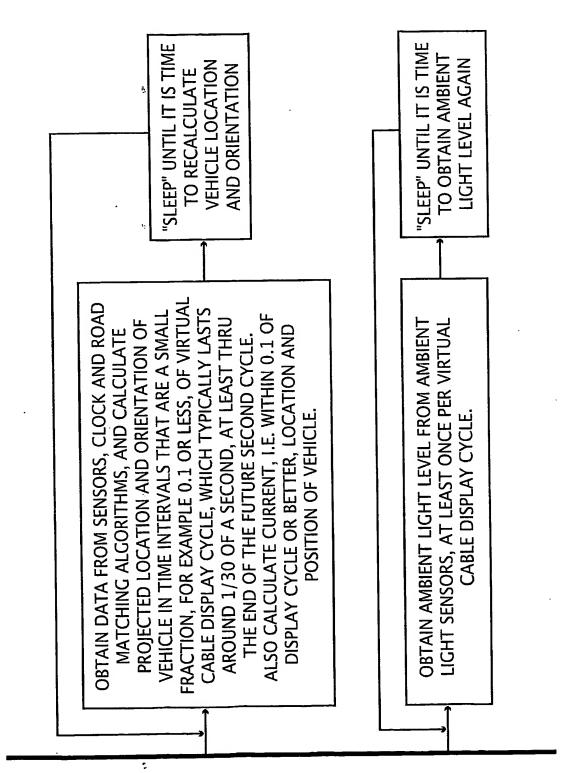


FIG. 60D

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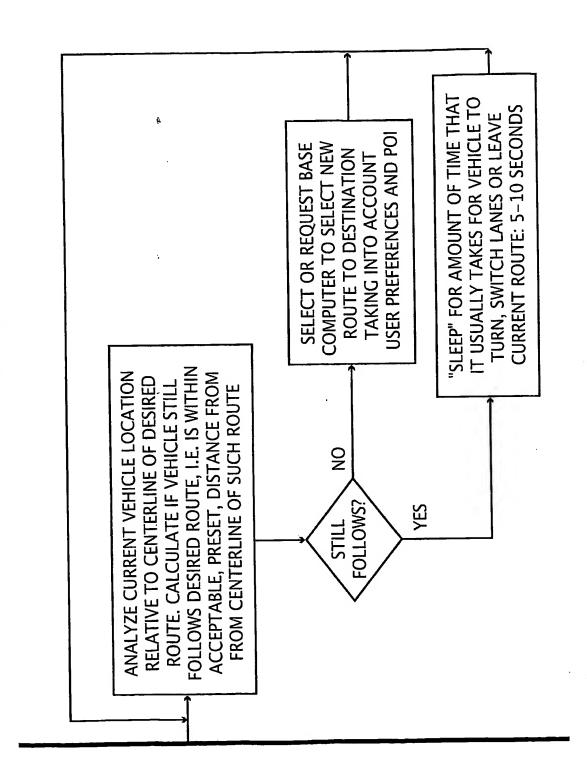


FIG. 60E

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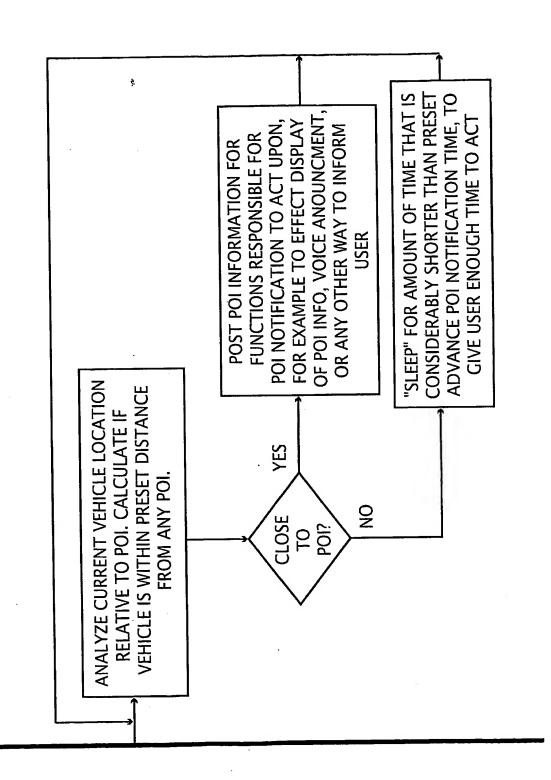
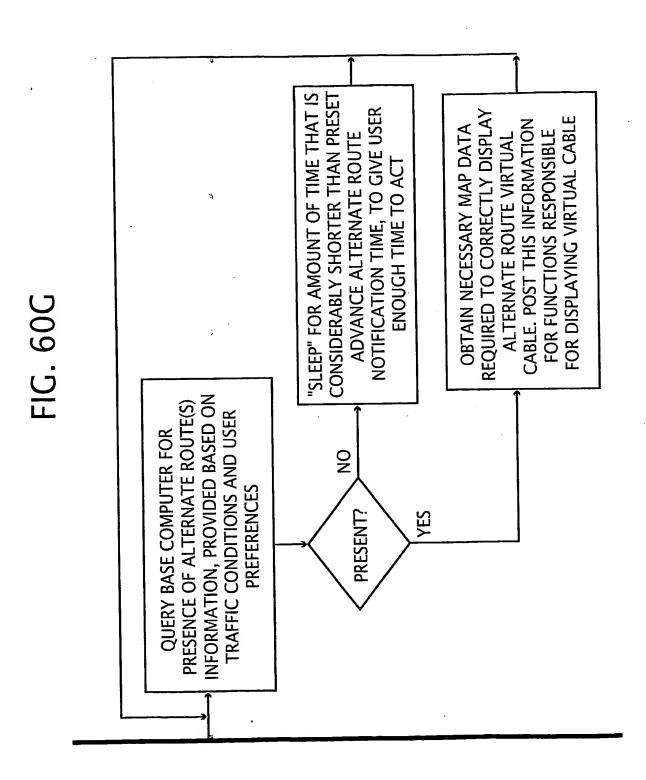


FIG. 60F

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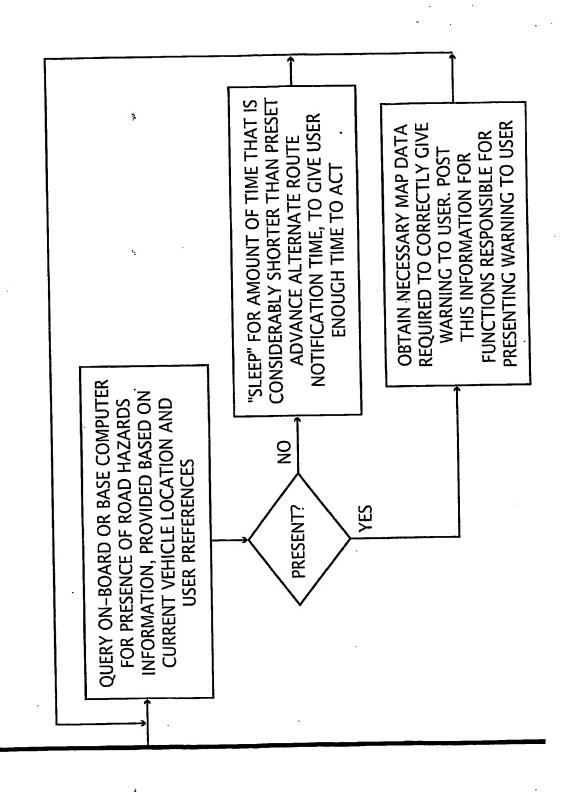


FIG. 60

DISPLAY DEVICE(S) TO PERFORM NEXT DISPLAY MECHANICAL PROPERTIES OF VIRTUAL CABLE USING VEHICLE LOCATION AND ORIENTATION DISPLAY(S), USER PREFERENCES AND OTHERS, WITH CONTROLLERS EMPLOYED BY VIRTUAL OTHER NECESSARY INFORMATION, SUCH AS THAT CAN BE TRANSLATED, BY ON-BOARD VIRTUAL CABLE GEOMETRICAL PROPERTIES COMPUTER(S), POSSIBLY IN COOPERATION CABLE DISPLAY DEVICE(S), INTO CONTROL INFORMATION, RELATIVE TO LOCATION OF CENTERLINE(S) OF SELECTED AND POSSIBLY LOCATION OF USER'S HEAD, OPTICAL AND CALCULATE SUCH REPRESENTATION OF SIGNALS REQUIRED BY VIRTUAL CABLE ALTERNATE ROUTE(S), AND KNOWING CYCLE OF VIRTUAL CABLE

USE REPRESENTATION OF VIRTUAL CABLE GEOMETRICAL PROPERTIES, COMBINED WITH AMBIENT LIGHT LEVEL, TO CREATE CONTROL SIGNALS REQUIRED BY VIRTUAL CABLE DISPLAY DEVICE(S) TO PERFORM NEXT DISPLAY CYCLE OF VIRTUAL CABLE

